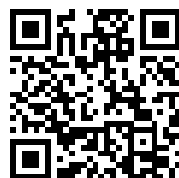


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THE MEDITERRANEAN  
PILOT. VOL. IV.

FIFTH EDITION.

1918.

# CAUTION WHEN APPROACHING BRITISH PORTS.

(To be inserted inside cover of all Sailing Directions.)

## PART I.—CLOSING OF PORTS.

(1) My Lords Commissioners of the Admiralty having taken into consideration the fact that it may be necessary to forbid all entrance to certain ports of the Empire, this is to give Notice that on approaching the shores of the United Kingdom, or any port of the British Empire, a sharp lookout should be kept for the signals described in the following paragraph, and for the vessels mentioned in paragraph (4). Part II, of this Notice, and the distinguishing and other signals made by them. In the event of such signals being displayed, the port should be approached with great caution, as it may be apprehended that obstructions may exist.

(2) If entrance to a port is prohibited, three *red* vertical lights by night, or three *red* vertical balls by day, will be exhibited in some conspicuous position in or near to its approach, which signals will also be shown by the vessels indicated in paragraph (4), Part II, of this Notice.

If these signals are displayed, vessels must approach the port with the greatest caution, and implicitly obey all orders or signals given them by the Examination vessel or Signal station.

## PART II.—EXAMINATION SERVICE.

(3) Under certain circumstances, it may become necessary to take special measures to examine vessels desiring to enter the ports or localities at home or abroad, referred to in Notices to Mariners No. 1 of 1918 and subsequent years.

(4) In such case, vessels carrying the distinguishing flags or lights mentioned in paragraph (6) will be charged with the duty of examining ships which desire to enter the ports and of allotting positions in which they shall anchor. If Government vessels, or vessels belonging to the local port authority, are found patrolling in the offing, merchant vessels are advised to communicate with such vessels with a view to obtaining information as to the course on which they should approach the port. Such communication will not be necessary in cases where the pilot on board has already received this information from the local authorities.

(5) As the institution of the Examination Service at any port will never be publicly advertised, especial care should be taken in approaching the ports, by day or night, to keep a sharp lookout for any vessel carrying the flags or lights mentioned in paragraph (6), and to be ready to "bring to" at once when hailed by her or warned by the firing of a gun or sound rocket.

In entering by night serious delay and risk will be avoided if four efficient all round lamps, two *red* and two *white*, are kept available for use.

(6) By day the distinguishing flags of the Examination Steamer will be a special flag (white and red horizontal surrounded by a blue border) and a blue ensign.

Also, three *red* vertical balls if the port is closed.

By night the steamer will carry : (a) Three *red* vertical lights if the port is closed : (b) three *white* vertical lights if the port is open.

The above lights will be carried in addition to the ordinary navigation lights, and will show an unbroken light around the horizon.

(7) Masters are warned that, when approaching a British port where the Examination Service is in force, they must have the distinguishing signal of their vessel ready to hoist immediately the Examination Steamer makes the signal.

(8) Masters are warned that, before attempting to enter any of these ports when the Examination Service is in force, they must in their own interests strictly obey all instructions as to entry given to them by the Examination Steamer.

Whilst at anchor in the Examination Anchorage, Masters are warned that they must not (except to avoid accident) lower any boats, communicate with the shore, work cables, move the ship, or permit anyone to leave the ship, without permission from the Examination Steamer.

(9) In case of fog, Masters of vessels are enjoined to use the utmost care, and the port itself should be approached with caution.

(10) Merchant vessels when approaching British ports are specially cautioned against making use of private signals of any description, either by day or night, the use of them will render a vessel liable to be fired on.

(11) The pilots attached to the ports will be acquainted with the regulations to be followed.

*(To face Cautionary Notice in all Sailing Directions.)*

**NOTATIONS OF SUPPLEMENTS AND ANNUAL  
SUMMARIES OF NOTICES TO MARINERS  
RELATING TO THIS BOOK.**

To be filled in by Navigating Officer.

[In Chart Dépôts the two first columns are alone to be filled up.]

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# NOTICE.

## HYDROGRAPHIC DEPARTMENT, ADMIRALTY.

Early in each year the information affecting this book, which has been published during the preceding year in the Admiralty Notices to Mariners, will sometimes be compiled and issued as a separate publication. If a Supplement has been issued during the year, this publication will only include Notices issued since the date of the Supplement. Mariners are advised to procure copies of these publications. They will be obtainable gratuitously from the Admiralty Agent or Sub-Agents for the sale of charts on presentation of the coupons on the next page, either personally or by letter. In the latter case the cost of postage must be enclosed.

The Supplements to this book which may be published will also be obtainable in a similar manner on presentation of the coupons below.

Supplement No. 9 to  
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VOL. IV., 1918.

Supplement No. 8 to  
MEDITERRANEAN PILOT,  
VOL. IV., 1918.

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Summary of Notices to Mariners  
published during 1927, affecting  
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Summary of Notices to Mariners  
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1925

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published during 1925 session  
Memorandum Book Vol. IV  
1925



# THE MEDITERRANEAN PILOT.

VOL. IV.

COMPRISING

THE ARCHIPELAGO, WITH THE ADJACENT COASTS  
OF GREECE, BULGARIA, AND TURKEY; INCLUDING  
ALSO THE ISLAND OF CRETE OR CANDIA.

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FIFTH EDITION.

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**ALL BEARINGS ARE TRUE.**

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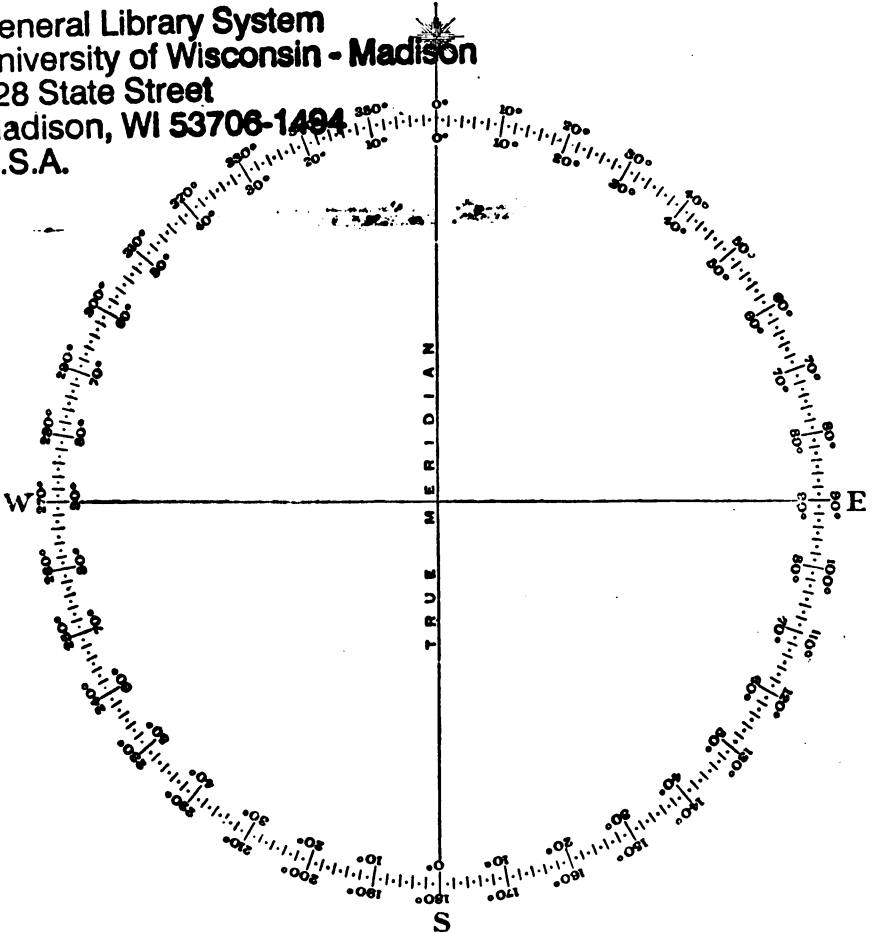
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## **CAUTION.**

**IN THIS WORK THE BEARINGS ARE ALL TRUE, IN DEGREES, FROM 0° (NORTH) TO 360°, MEASURED CLOCKWISE.**

**THE BEARINGS OF LIGHTS ARE GIVEN FROM SEAWARD.**

**THE LATITUDES AND LONGITUDES GIVEN IN THE TEXT ARE APPROXIMATE.**

**THE VARIATION GIVEN IN THE SEVERAL PAGES IS FOR THE YEAR 1918.**

**THE DISTANCES ARE EXPRESSED IN NAUTICAL MILES OF 60 TO A DEGREE OF LATITUDE.**

**A CABLE'S LENGTH IS ASSUMED TO BE EQUAL TO THE TENTH PART OF A NAUTICAL MILE.**

**THE DEPTHS ARE GIVEN AT MEAN LEVEL OF LOW WATER SPRING TIDES, WHERE NOT OTHERWISE STATED.**

**HEIGHTS ON THE LAND ARE GIVEN ABOVE MEAN LEVEL OF HIGH WATER SPRING TIDES.**

**WHEN SHADING IS USED TO INDICATE COLOURS OF FLAGS, TIDAL LIGHT SIGNALS, OR BEACONS, IT IS AS FOLLOWS:**



Yellow.



Red.



Blue.



Green.



Black.



## ADVERTISEMENT TO THE FIFTH EDITION.

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THE *Mediterranean Pilot*, Vol. IV., contains Sailing Directions for the islands of the *Ægean Archipelago*, together with the adjacent coasts of Greece, Bulgaria, and Turkey, commencing at Cape Matapan on the west, and ending at Cape Alupo on the east; including also the island of Crete or Candia.

These descriptions are derived from the Admiralty surveys conducted by Captains Copeland, Stanley, Graves, Brock, Spratt, Mansell, Learmonth, and other officers of the Royal Navy, between the years 1832 and 1903.

Supplementary details derived from the remark books of officers of His Majesty's ships, and other documents in the Hydrographic Department of the Admiralty, have also been included.

The *Mediterranean Pilot*, Vol. IV., was compiled in 1882 by Commander James Penn, late of the Hydrographic Department, Admiralty.

Later editions were published in 1892, 1900, and 1908, the last being prepared by Commander C. V. Smith, R.N., of the Hydrographic Department, Admiralty.

The preparation of the present, fifth, edition was partially carried out by Captain A. W. Torlesse, R.N., and completed by Captain A. G. Douglas, R.N. A bibliography of the various works consulted is attached.

Views have been added to the volume to supplement those on the charts, and it is anticipated that they may prove of service to the mariner.

All details of Lights and Fog signals have been omitted; for these the Admiralty List of Lights must be consulted.

All bearings are true, measured clockwise, in degrees, from 0° (North) to 360°.

Mariners and others are invited, in the interests of navigation, to forward to the Hydrographer, Admiralty, London, S.W.1, any information that may come under their notice, which would be useful for the correction of the charts and other Hydrographic publications issued



by the British Admiralty; *early* advice as to newly-discovered dangers, the establishment of, or changes in, any aids to navigation, is specially requested.

Copies of a form (H 102), on which to render information, can be obtained gratis from the Admiralty Chart Agent, Mr. J. D. Potter, 145, Minories, London, E.1, or of any of his sub-agents in Great Britain and abroad, a list of whom will be found at the end of this book.

By the publication of this volume, the fourth edition of *Mediterranean Pilot*, Vol. IV., Supplement No. 3, 1916, and all Notices to Mariners up to and including No. 532 of 1918, relating to that work, are cancelled.

J. F. PARRY,  
*Rear Admiral and  
Hydrographer.*

*Hydrographic Department,  
Admiralty, London,  
29th August, 1918.*

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LIST OF GREEK AND TURKISH WORDS OCCASIONALLY  
USED IN THE CHARTS AND SAILING DIRECTIONS  
OF THE GRECIAN ARCHIPELAGO.

GREEK WORDS.

Greek.	English.	Greek.	English.
Agios, -a, -on .. ..	Holy, sacred, saint	Lithos .. ..	A stone.
Akropolis .. ..	Citadel, fortress.	Mavro .. ..	Black.
Akroterion .. ..	Cape.	Megas, Megale, } Great.	
Anemomulos .. ..	Windmill.	Megalo .. ..	
Apeliotes .. ..	East.	Melas, Melaina, Melan	Black.
Aspros, -a, -on .. ..	White.	Meses .. ..	North-east.
Aster, astron .. ..	A star.	Metron .. ..	A measure.
Borras, Boreas .. ..	North.	Mikros, -a, -on .. ..	Little, small.
Bounon .. ..	Mountain, hill.	Naos .. ..	Church.
Brachos .. ..	Cliff.	Naulochos .. ..	Harbour.
Broma .. ..	Food.	Naus, Nafs .. ..	A ship.
Chersonesus .. ..	Peninsula.	Neos, -a, -on .. ..	New.
Chloros, -a, -on .. ..	Green.	Nero .. ..	Water.
Chorion .. ..	Village.	Nesos, Nisi, Nisia .. ..	Isle, island, islands
Chronos .. ..	Time.	Notos .. ..	South.
Croma .. ..	Colour.	Oikos .. ..	House.
Dendron .. ..	Tree.	Ormos .. ..	Bay, roadstead.
Diorux .. ..	Canal.	Oros .. ..	Mountain, hill.
Drumos .. ..	Wood.	Palaios, -a, -on .. ..	Old.
Ekklesia .. ..	Church.	Petra .. ..	Rock.
Eruthros, -a, -on .. ..	Red.	Petros .. ..	Stone or rock.
Euros .. ..	South-east.	Phanos .. ..	Light, beacon.
Glotta or glossa .. ..	Tongue.	Pharos .. ..	Lighthouse.
Gonia .. ..	Angle or corner.	Philos .. ..	A friend.
Grapho .. ..	I write.	Phos, photos .. ..	Light.
Helios .. ..	The sun.	Pilotis .. ..	Pilot.
Hudor .. ..	Water.	Pion .. ..	Round.
Isthmos .. ..	Isthmus.	Pneuma .. ..	Wind.
Kastelli .. ..	Castle, fortress.	Polis .. ..	City, town.
Kastro or Kastron .. ..	Castle, fortress.	Potamos .. ..	River.
Kato .. ..	Lower.	Prasinos, -e, -on .. ..	Green.
Kavo .. ..	Headland.	Prion .. ..	Sand.
Kheronesos, Kherso-		Prioreus, .. ..	Pilot.
nisi .. ..	Peninsula.	Purgos, Pyrgos .. ..	Tower.
Khora .. ..	Small town.	Semanterion .. ..	Buoy, mark.
Kolpos .. ..	Gulf.	Skiron .. ..	North-west.
Kome .. ..	Village.	Skopeo .. ..	I see.
Kuklos .. ..	A circle.	Skopelos .. ..	A rock.
Limen .. ..	Harbour, port.	Taphos .. ..	A tomb.
Limne .. ..	Lake.	Vunon .. ..	Mountain.
Lips .. ..	South-west.	Zephuros, Zephyros .. ..	West.

## TURKISH WORDS.

Turkish.	English.	Turkish.	English.
Ada, Adassi, Ata	Island, islet, islands	Koyun	Bight, cove.
Agatah, Aghach, Aghaj	Tree.	Kuchuk	Small.
Agha	Eunuch, master, officer.	Kulleh	Tower.
Aghz	Entrance.	Kum	Sand.
Ak	White.	Kuyu	A well.
Asmak	Still water.	Kybla	South.
Bahrieh Feriki	Vice-Admiral.	Kyupru	A bridge.
Bakshish	Gratuities.	Liman	Bay, harbour.
Balchik	Clay.	Liman-reissi	Port-Admiral, Harbour master.
Bash	Head, chief.	Liva	Country, flag.
Batagin	A marsh.	Lodos	South or South-west wind.
Bazar	Market.	Maden	Mine.
Beyaz	White.	Maghreb	West.
Bir	Well.	Merdshan	Coral.
Boghaz	Channel, strait, estuary.	Mesjid	Mosque.
Burnu, Burun	Cape, point, promontory, headland.	Minare	Minaret.
Buyuk	Great.	Moucaddress	A saint.
Capitan or Captan	Commander of a ship.	Mudir, Mouselion	Governor of a city.
Chai	River.	Nahr, Nehir	River, stream.
Chamur	Mud.	Nishan	Beacon.
Chiflik	Farm.	Nizam	Regulation.
Dagh or Tagh	Mountain.	Orman	Forest, wood.
Demir-yeri	Anchorage.	Palanka	Fort, fortress.
Deniz	Sea.	Poiras	North-east.
Deniz teli	Telegraph cable.	Posta	Post.
Dere, Deresi	Valley.	Pussula	Compass.
Derin	Deep.	Rakitsau	Still water.
Devirmeni	Mill.	Reis	Chief, captain of a ship.
Dil	Isthmus, point, spit of sand.	Rusghar	Wind.
Dragoman	Interpreter.	Sanjak	Flag or District.
Duwar	Mole.	Sanjak-i-Humayun	Imperial standard.
Eski	Old, ancient.	Sanjak sheriff	A religious flag.
Fanar, Fener	Lighthouse, beacon	Sarai	Palace, house.
Geul, Ghol, or Gol	Lake.	Sedd	Mole.
Gharb, Gharbi	West.	Selam	Health, a salutation.
Gyumruk	Custom house.	Shahbender	An ambassador.
Ich, Ichereh	Inner.	Shamandireh	A buoy.
Inshallah	Please God.	Shark	East.
Irmak	River.	Sharki	Eastern.
Iskele, Iskelesi	Landing-place.	Shehr or Sheher	Town, city.
Jami	Mosque.	Shimal	North.
Jel	Wind.	Siglic, Sighi	A bank, shoal.
Jenub, Jenubi	South.	Su	Water.
Kaba-kum	Gravel.	Tabia	Battery.
Kale, Kaleh, Kalessi	Castle.	Tashlik	Stony.
Kapu	Gate, pass.	Tchekmejehe	Bridge.
Kara	Black.	Tchorak	Marsh.
Karantina	Quarantine.	Tepe	Hill, tumulus.
Kaya	Bluff, cliff, rocky.	Tersaneh	The Turkish Admiralty.
Kayalik	Rocky.	Terjuman	Interpreter, dragoman.
Koui	Village, hamlet.	Tish, Tashrah	Outer.
Keurfaz	Gulf.	Tograuk, Tutak	Bar of a river.
Khan	Inn, hotel.	Tus, Tuz	Salt.
Kilaguz	A pilot.	Ufuk	Horizon.
Kilisa	Church.	Vilayet	Province, district.
Kioi	Village, hamlet.	Yar	Bluff, cliff, hill.
Kiurfaz	Bay.	Yeni	New.
Kizil, Krimzi	Red.	Yer	Land, country.
Konsolos	Consul.	Yol	Channel road.
		Yukari	Up.



## SYSTEM OF ORTHOGRAPHY.

*Adopted by the Admiralty for Sailing Directions and Charts.*

As it is highly desirable that all officers of His Majesty's Navy and others should be able, on consulting the Admiralty Charts, to at any rate approximate to the correct pronunciation of words that they find therein written, it is necessary, in consequence of the multiplicity of sounds attached to nearly every combination of letters in the English language, to adopt an arbitrary system of orthography for the spelling of all geographical names in languages which are not habitually written in the Roman character.

The system adopted and described herein, originally introduced by Admiral Washington, has been accepted by the Royal Geographical Society, and all public departments in Great Britain, as well as by the United States.

As far as has been found possible with existing knowledge, native names are spelt in accordance with this system, which has been for some years in process of gradual introduction into all Admiralty Sailing Directions and Charts.

No change is made in the orthography of foreign names in countries which use Roman letters; thus French, Spanish, Portuguese, Dutch, &c., names will be spelt as by the respective nations.

1. Where native names have been so long written in a form which, though not in accordance with this system, has become familiar to English eyes from being so spelt in all charts and maps, they are retained.

2. The true sound of the word, as locally pronounced, is taken as the basis of the spelling.

3. An approximation of the sound is alone aimed at. A system, which would attempt to represent the more delicate inflections of sound and accent, would be so complicated as only to defeat itself.

4. The broad features of the system adopted are that vowels are pronounced as in Italian and consonants as in English; *every letter being pronounced*. Two accents only are used:—

(1.) The acute, to denote the syllable on which stress is laid. The use of this is very important, as the sounds of many names are entirely altered by the misplacement of this "stress."

(2.) The sign  $\sim$  over the letter *u* to denote the short sound of that vowel under certain circumstances. (*See table.*)



5. When two vowels come together, each one is sounded, though the result, when spoken quickly, is sometimes scarcely to be distinguished from a single sound, as in *ai*, *au*, *ei*.

The amplification of the rules is given on the following pages.

Information is invited as to the proper spelling of native names, so as to produce the nearest approximation to the true sound, by this system.

Letters.	Pronunciation and Remarks.	Examples.
a	<i>ah</i> , <i>a</i> as in <i>father</i> - - - - -	Java, Banána, Somáli, Bari.
e	<i>eh</i> , <i>e</i> as in <i>bet</i> ; <i>a</i> as in <i>fate</i> - - -	Tel-el-Kebír, Oléleh, Yezo, Levúka, Peru.
i	English <i>e</i> ; <i>i</i> as in <i>ravine</i> ; the sound of <i>ee</i> in <i>beet</i> . Thus, not <i>Feejee</i> , but	Fiji, Hindi.
o	<i>o</i> as in <i>mote</i> - - - - -	Tokyo.
u	long <i>u</i> as in <i>flute</i> ; the sound of <i>oo</i> in <i>boot</i> . <i>oo</i> or <i>ou</i> should never be employed for this sound. Thus, not <i>Zooloo</i> or <i>Zoulou</i> , but	Zulu, Sumatra.
	The shorter sound of the different vowels, when necessary to be indicated, can be expressed by doubling the consonant that follows. The sounds referred to are as follows:— The short <i>a</i> as in <i>fatter</i> , as compared with the long <i>a</i> as in <i>father</i> . The short <i>e</i> as in <i>better</i> , as compared with the long <i>e</i> as in <i>fate</i> . The short <i>i</i> as in <i>sinner</i> , as compared with the long <i>i</i> as in <i>ravine</i> . The short <i>o</i> as in <i>sobbing</i> , as compared with the long <i>o</i> as in <i>sober</i> . The short <i>u</i> as in <i>rubber</i> , as compared with the long <i>u</i> as in <i>rubric</i> .	Yarra, Tanna, Mecca, Jidda, Bonny.*
ü	is the same short sound of <i>u</i> as is denoted by doubling the consonant following, but is used, and only used, where such doubling is impossible, as in the case of words where <i>u</i> is followed by two different consonants, as in <i>Tung</i> , pronounced as the English <i>tongue</i> .  Doubling of a vowel is only necessary where there is a distinct repetition of the single sound.	Nuulúa, Oosima.
ai	English <i>i</i> as in <i>ice</i> - - - - -	Shanghai.

\* The *y* is retained as a terminal in this word under Rule 1. The word is given: as a familiar example of the alteration in sound caused by the second consonant.

Letters.	Pronunciation and Remarks.	Examples.
au	<i>ow</i> as in <i>how</i> . Thus, not <i>Foochow</i> , but	Fuchau.
ao	is slightly different from <i>au</i> - - -	Macao.
aw	when followed by a consonant or at the end	
	of a word, as in <i>law</i> - - - thus	Cawnpore.
ei	is the sound of the two Italian vowels, but	Beirút, Beilul.
	is frequently slurred over, when it is	
	scarcely to be distinguished from <i>ey</i> in	
	the English <i>they</i> , or <i>ei</i> in <i>eight</i> .	
b	English <i>b</i> .	
c	is always soft, but is so nearly the sound of	Celébes.
	<i>s</i> that it should be seldom used.	
	If <i>Celébes</i> were not already recognised it	
	would be written <i>Selébes</i> .	
ch	is always soft, as in <i>church</i> - - -	Chingchin.
d	English <i>d</i> .	
f	English <i>f</i> . <i>Ph</i> should not be used for the	
	sound of <i>f</i> . Thus, not <i>Haiphong</i> , but	Haifong, Nafa.
g	is always hard. (Soft <i>g</i> is given by <i>ŋ</i> ) -	Galápagos.
h	is always pronounced when used.	
hw	as in <i>what</i> ; better rendered by <i>hw</i> than <i>wh</i> ,	Hwang ho,
	or <i>h</i> followed by a vowel. Thus, <i>Hwang</i>	Ngan hwei.
	<i>ho</i> , not <i>Whang ho</i> or <i>Hoang ho</i> .	
j	English <i>j</i> . <i>Dj</i> should never be put for this	Japan, Jinchuen.
	sound.	
k	English <i>k</i> . It should always be put for the	
	hard <i>c</i> . Thus, not <i>Corea</i> , but	Korea.
kh	The Oriental guttural - - -	Khan.
gh	is another guttural, as in the Turkish -	Dagh, Ghazi.
l	} As in English.	
m		
n		
ng		
	has two separate sounds, the one hard as in	
	the English word <i>finger</i> , the other as in	
	<i>singer</i> . As these two sounds are rarely	
	employed in the same locality, no attempt	
	is made to distinguish between them.	
p	As in English.	
ph	As in <i>loophole</i> - - - - -	Mokpho,
		Chemulpho.
th	stands both for its sound in <i>thing</i> , and as	
	in <i>this</i> . The former is most common -	Bethlehem.
q	should never be employed; the sound of <i>qu</i>	Kwangtung.
	in <i>quiver</i> is given as <i>kw</i> . When <i>qu</i> has	
	the sound of <i>k</i> , as in <i>quoit</i> , it should be	
	given by <i>k</i> .	
r	As in English.	
s	As in <i>sin</i> .	
sh	} As in English.	
t		
v		
w		
x	- - - - -	Sawákin.

Letters.	Pronunciation and Remarks.	Examples.
y	is always a consonant, as in <i>yard</i> , and therefore should never be used as a terminal, <i>i</i> or <i>e</i> being substituted. Thus, not <i>Mikindány</i> or <i>Wady</i> , but not <i>Kwaly</i> , but	Kikūyu.  Mikindáni, Wadi. Kwale.
z	English z - - - - -	Zulu.
zh	French <i>ʒ</i> , or as <i>s</i> in <i>treasure</i> - - - - - Accents should not generally be used, but where there is a very decided emphatic syllable or stress which affects the sound of the word, it should be marked by an <i>acute</i> accent.	Muzhdaha. Tongatábu, Galápagos, Paláwan, Saráwak.

In the case of native names in countries under the dominion of other European powers, in whose maps, charts, &c., the spelling is given according to the system adopted by that power, such orthography is, as a rule, disregarded, and the names are spelt according to the British system. Thus the island east of Java in possession of the Dutch is spelt *Madoera* by them, but on Admiralty charts *Madura*. A town in Java appears on Dutch charts as *Tjilatjap*; in the British, *Chilachap*.

When a foreign language is written in a vocabulary of fixed sounds, so as to permit of transliteration into the British system, a table of equivalents for each letter is drawn up, and names of places can be transliterated without regard to pronunciation.

It is rare, however, that any language is absolutely without variation in the sound of any letters or combination of letters. This system therefore requires care. The rules for such transliterations so far adopted by the Admiralty are here given.

To reduce Greek names to the orthographic form, required by the foregoing system, would require so many changes that it has been decided to defer the revision of Admiralty publications until the system has been more generally introduced and used.

The Greek names are therefore left for the present in their old shape, but these give in most cases a very erroneous idea of the sound of the names, as pronounced by Greeks, and in many cases the present spelling gives a clue to the pronunciation by aid of the table of equivalents.

Thus *Ευβοία* now spelt *Eubœa* is pronounced *Evvia*.

„ *Χαλκίς* „ *Chalcis* „ *Khalkis*.

„ *Κεφαλληνία* „ *Cephalonia* „ *Kefallinia*.

Whenever *C* appears in a Greek name as at present written it may be taken for granted it has the sound of *K*.

Greek Letters	Roman Equivalents by System	Greek Letters	Roman Equivalents by System
Α α	a	Ρ ρ	r
Β β	v	Σ σ ς	s
Γ γ	g	Τ τ	t
Δ δ	d	Υ υ	i
Ε ε	e	Φ φ	ph
Ζ ζ	z	Χ χ	kh
Η η	i	Ψ ψ	ps
Θ θ	th	Ω ω	o
Ι ι	i	ΑΙ αι	ei
Κ κ	k	ΕΙ ει	i
Λ λ	l	ΟΙ οι	i
Μ μ	m	ΟΥ ου	u
Ν ν	n	ΥΙ υι	i
Ξ ξ	x	ΑΥ αυ	aph, av
Ο ο	o	ΕΥ ευ	eph, ev
Π π	p	ΗΥ ηυ	iph, iv

In the transliteration of names in India and the Persian Gulf, the rules adopted by the Indian Government have been adopted, excepting that where the letter Q not followed by "u" is used in that system, the letter K is substituted.

In the transliteration of Malay or other native names from Dutch charts where they are spelt according to Dutch orthography—

Dj has been rendered by J,  
Tj     "     "     "     Ch,  
oe }     "     "     "     U,  
oo }  
ou }  
ee     "     "     "     E.

J in the middle of a word if followed by oe has been rendered by Y though not always. Ij has been rendered by ai generally.

For Chinese names, the Wade system of spelling, as modified in Playfair's "Cities and Towns of China," is adopted as a basis, being transliterated into this system in the following manner—

For CH', K', T', TS', TZ', write CH, K, T, TS, and TZ.

„ Chieh write Chie.

For Ê, if pronounced short as in CHÊN, FÊN, &c., write Û, or U followed by a double consonant.

For Ê terminal, as in CHÊ, LÊ, &c., write AW.

For Eh write E.

„ ÊI write EI.

For ÊRH write URR.  
 „ HUA write HWA.  
 „ HUI write HWEI.  
 „ HUO write HWAU.  
 „ J write ZH.  
 „ KUA write KWA.  
 „ K'UA write KWA.  
 „ KUEI write KWEI.

For K'UEI write KWEI.  
 „ KUO write KWAU.  
 „ O write AW.  
 „ OU write O.  
 „ P' write PH.  
 „ SSŪ write SE.  
 „ Ū write U.  
 „ Ū write E.

In this system the Manchurian dialect is adopted as the basis ; but with regard to names in the provinces of FU KIEN, KWANG TUNG and KWANGSI, the local pronunciation should be followed as a guide for the spelling. CHIH and SHIH, pronounced somewhat as the shi in shirt, have been retained, as the sounds are difficult to express according to the Royal Geographical Society's rules. Canton and Peiho are to be spelt in this, the customary way.

The following table gives the equivalents used by the Admiralty in the transliteration of Russian names :—

Printed Characters	Italic Characters	Equivalents in Adm <sup>y</sup> System	Remarks	Printed Characters	Italic Characters	Equivalents in Adm <sup>y</sup> System	Remarks
А а	<i>A a</i>	<i>a</i>		Т т	<i>T t</i>	<i>t</i>	
Б б	<i>B b</i>	<i>b</i>		У у	<i>Y y</i>	<i>u</i>	
В в	<i>B v</i>	<i>v</i>		Ф ф	<i>Φ φ</i>	<i>f</i>	
Г г	<i>Γ γ</i>	<i>g(h)</i>	<i>If g. always hard If h. as in English</i>	Х х	<i>X x</i>	<i>kh</i>	
Д д	<i>Δ δ</i>	<i>d</i>		Ц ц	<i>Ц ц</i>	<i>tz</i>	
Е е	<i>E e</i>	<i>e(ye)</i>	<i>e in bel (ye when initial)</i>	Ч ч	<i>Ч ч</i>	<i>ch</i>	
Ж ж	<i>Ж ж</i>	<i>z h</i>	<i>Sound of French j or z in aster-o.</i>	Ш ш	<i>Ш ш</i>	<i>sh</i>	
З э	<i>З э</i>	<i>z</i>		Щ щ	<i>Щ щ</i>	<i>shech</i>	<i>shech in Russian church</i>
И и	<i>И и</i>	<i>i</i>		Ъ ъ	<i>Ъ ъ</i>	<i>mute</i>	<i>Omit in transliteration</i>
І і	<i>I i</i>	<i>i</i>		Ы ы	<i>Ы ы</i>	<i>{y i}</i>	<i>in middle of a word at end</i>
К к	<i>K k</i>	<i>k</i>		Ь ь	<i>Ь ь</i>	<i>mute</i>	<i>Omit in transliteration</i>
Л л	<i>Л л</i>	<i>l</i>		Ѣ ѣ	<i>Ѣ ѣ</i>	<i>ye</i>	
М м	<i>M m</i>	<i>m</i>		Э э	<i>Э э</i>	<i>e</i>	<i>a in fate</i>
Н н	<i>H n</i>	<i>n</i>		Ю ю	<i>Ю ю</i>	<i>yu</i>	
О о	<i>O o</i>	<i>o</i>		Я я	<i>Я я</i>	<i>ya</i>	
П п	<i>П п</i>	<i>p</i>		Ө ө	<i>Ө ө</i>	<i>f</i>	
Р р	<i>P p</i>	<i>r</i>		Ү ү	<i>Ү ү</i>	<i>œ</i>	<i>Seldom used</i>
С с	<i>C c</i>	<i>s</i>		ӱ ӱ	<i>ӱ ӱ</i>	<i>i</i>	

Note. The combinations Бӱ and ӱӱ should be transliterated i.

## INFORMATION RELATING TO CHARTS, SAILING DIRECTIONS, AND GENERAL NAVIGATION.

### ON THE CORRECTION OF CHARTS, SAILING DIRECTIONS, AND LIGHT LISTS.

The three descriptions of publications as guides to navigation, which are affected by the continual changes and alterations that take place, are the Charts, the Sailing Directions, and the Light Lists.

Of these the Charts should always be, so far as our knowledge permits, absolutely correct to date; the Sailing Directions, however, cannot, from their nature, be so corrected, and *in all cases where they differ from charts, the largest scale chart must be taken as the guide for navigation.*

The Light Lists are published annually.

**1. Charts.**—When issued to a ship on commissioning, the charts have received all necessary corrections to date. As sent from the Hydrographic Department they are correct to the date of issue as stamped on each folio. They then receive such corrections by hand in the dépôts as are required, and are so issued to the ships.

The charts in the folios should have the same number and title as shown against each in the Lists pasted on the outside of the folio. The Navigating Officer is to satisfy himself that they do so agree before signing the receipt for the charts, &c.

All small but important corrections affecting navigation that can be made by hand are notified by Notices to Mariners, and should at once be placed on the charts to which they refer, in accordance with the following uniform system:—

1. All corrections, additions to, erasures on Charts are to be neatly made in red (except as explained in paragraph 10*d*). In every case the recognised Chart abbreviations are to be used. (*See Admiralty Chart D. 11.*)

2. The year and number of every Notice to Mariners, from which corrections, &c., as above, have been made, are to be entered in red at the lower left-hand corner of the Chart, in the following manner, viz.:—

1918, 9, 14, 18, 21, 23, &c., and in no other place or form (except as explained in paragraph 10*d*).

3. *General Remarks.*—The amount of information to be inserted on a Chart is to be in accordance with that already engraved on such Chart.

4. *The year date* is to be inserted against wrecks, reported shoals, channels dredged, depth of water on bars or in shifting channels, and irregularity of lights, but only on the largest scale chart affected.

5. *On the Coast Charts* full particulars of lights and fog signals are to be inserted where possible, omitting minor details of lights and fog signals of harbours.

6. *On Charts of smaller scale than Coast Charts* lights and fog signals of harbours are not to be inserted, and particulars of other

lights and fog signals are to be lessened as the scale of the Chart decreases, omitting details in the following order:—

For lights—(1) Height, (2) Period, (3) No in Group, (4) Visibility; thus:—

Lt. Gp. Fl., (3) Red. ev. 20 sec. 150 ft., vis. 12 m.

(1) Lt. Gp. Fl., (3) Red. ev. 20 sec. vis. 12 m., (2) Lt. Gp. Fl., (3) Red. vis. 12 m.

(3) Lt. Gp. Fl. Red. vis. 12 m., (4) Lt. Gp. Fl. Red.

For fog signals, thus:—(1) Fog Siren, 2 ev. min., (2) Fog Siren, ev. min., (3) Fog Siren.

7. *On Ocean Charts* lights visible 15 miles or over are alone to be inserted, and then only their character and colour, *e.g.*, Lt. Alt., Lt. Gp. Fl., Lt. Occ., Lt. F.R.

8. *Light-buoys*.—No period is to be inserted against a light-buoy except in large scale plans; on ordinary scales only the character, *e.g.*, Lt. Occ., Lt. Fl.

9. *On Coast Charts* inner harbour buoys and beacons are not to be inserted, and on small scale coast charts only the outer buoys.

10. *Arrangement of Writing, &c.*—Writing is to be as much as possible clear of the water, unless the objects referred to are on the water:—

- (a) When inserting corrections, care must be taken not to obliterate any of the other information already on the chart.
- (b) When "Notes" are to be inserted (such as Cautionary, Tidal, &c.), they should be written in a convenient but conspicuous place, where they will not interfere with any other details.
- (c) *Erasures* are never to be made. Where necessary, the details to be corrected are to be crossed through in red ink.
- (d) *Temporary or intended changes* are to be inserted on the chart in pencil, with the number and year of the Notice to Mariners against them, thus:—N. to M. <sup>43</sup>/<sub>1913</sub> temp. (which is also to be repeated in pencil *below* the "small corrections" dates at the lower left-hand corner of the chart), and in the case of intended changes, the particulars finally inked in, in red, when further notice has been received that the changes have been made. In the case of temporary changes, the pencil notations are to be rubbed out when a further Notice has been received cancelling them.

Charts, when received from a Chart dépôt or direct from the Hydrographic Department, will not have received the above-mentioned pencil corrections, but on first supply of a Chart Set, a copy of the latest Notice to Mariners, containing a List of all Notices to Mariners of a Temporary character and Preliminary Notices which are still in force *by which any Charts are temporarily affected*, will be specially handed to the Navigating Officer or attached to Chart Set, and the first duty of the Navigating Officer will be to make the necessary corrections in pencil to the charts affected.

11. One copy of all Notices to Mariners is to be pasted into the Sailing Directions, in its appropriate place, so that if fuller detail be required than the scale of the chart permits to be given, it will be found on the proper page referring to the given locality or subject.

12. Unmounted Sets of Charts supplied for the personal use of the Admiral, Atlas folios supplied for information of Officers and Junior Officers, and Charts for Ships' Company, are stamped, "Not to be used for Navigation," and need not, therefore, be kept corrected.

**2. Sailing Directions** are not corrected before issue, but on page iii. in the "Advertisement" to each volume will be found the number of the last Admiralty Notice to Mariners used in its revision; the numbers of the subsequent Notices affecting it between going to press and issue to H.M. Ships are given in the Notice to Mariners announcing its publication.

Supplements referring to each volume are published from time to time. Supplements contain all the information received up to date since the publication of the volume to which they refer.

The existence of a Supplement is to be noted in the tabular form placed for the purpose inside the cover of each volume. It may either be retained intact, for reference, notations referring to it being made on the pages of the Sailing Directions affected; or it may be cut up, if considered desirable, the slips being pasted in the volume at the appropriate place.

In January of each year, a summary of the information affecting certain volumes of Sailing Directions, which has been published during the preceding year in Admiralty Notices to Mariners, is sometimes issued as a separate publication. If a Supplement has been issued during the year this summary will only include Notices to Mariners issued since the date of such Supplement.

Notices to Mariners prior to the date of issue of a Chart Set from a Chart Dépôt are supplied with the set, to complete the interval between the last published Supplement, or Summary of Notices to Mariners, and the issue of the Chart Set, and an early duty of the Navigating Officer after drawing a Chart Set is to correct the Sailing Directions from the Supplements, Annual Summaries of Notices to Mariners, and Notices to Mariners supplied with the Chart Set.

One copy of each Notice to Mariners should be pasted into the Sailing Directions in its appropriate place as soon as received.

It must, however, be thoroughly understood that Sailing Directions will never be correct in all minor details, except up to the date of the last Supplement, and that, when differences exist, the charts, which should be corrected from the most recent information, should be taken as the guide; for which purpose, for ordinary navigation, they are sufficient.

**3. The Light Lists**, published annually early in each year, are not corrected in the dépôts before issue, but appendices are issued every week with the weekly copies of Notices to Mariners, giving the alterations that have taken place.

It is the duty of the Navigating Officer when he receives the Chart Set to make notations in the Light Lists from these appendices, and from Notices to Mariners of later date; and to keep them so corrected from time to time.



The Light Lists should always be consulted as to the details of a light, as the lights are not described in the Sailing Directions. A red label to this effect is inserted opposite page 1 of all Sailing Directions. The charts also may not be equally up-to-date in some details, for which no Notices to Mariners have been issued.

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## THE USE OF CHARTS AS NAVIGATIONAL AIDS AND GENERAL REMARKS RELATING TO PRACTICAL NAVIGATION.

1. *Reliance on a Chart.*—The value of a chart must manifestly depend upon the accuracy of the survey on which it is based, and this becomes more important the larger is the scale of the chart.

To estimate this the date of the survey, which is always given in the title, is a good guide. Besides the changes that, in waters where sand or mud prevails, may have taken place since the date of the survey, the earlier surveys were mostly made under circumstances that precluded great accuracy of detail, and, until a plan founded on such a survey is tested, it should be regarded with caution. It may, indeed, be said that, except in well-frequented harbours and their approaches, no surveys yet made have been so minute in their examinations of the bottom as to make it certain that all dangers have been found. The fullness or scantiness of the soundings is another method of estimating the completeness of a chart. When the soundings are sparse or unevenly distributed, it may be taken for granted that the survey was not in great detail.

It appears to be insufficiently realised that the degree of reliance which may reasonably be placed upon an Admiralty chart, even in surveys of modern date, is mainly dependent on the scale on which the survey was made. The scale for publication is now generally that of the original survey, except in the case of Coast sheets, which are sometimes reduced. It should not, therefore, be assumed that the original survey was made on a larger scale than that published.

It must be borne in mind that the only method of ascertaining the inequality of the bottom of the sea is by the laborious process of sounding, and that in sounding over any area, the boat or vessel obtaining the soundings is kept on given lines; that each time the lead descends it only ascertains the depth of water over an area equal to the diameter of the lead, that is about two inches, and that consequently each line of soundings, though miles in length, is only to be considered as representing a width of two inches.

Surveys are not made on uniform scales, but each survey is made on a scale commensurate with its apparent importance. For instance, a general survey of a coast which vessels only pass in proceeding from one place to another is not usually made on a scale larger than one inch to the nautical mile, while surveys of areas where vessels are likely to anchor, are made on a scale of three inches to the mile, and surveys of frequented ports, or harbours likely to be used by Fleets, on a scale of from six inches to ten inches to the nautical mile.

Close examination by sounding is the only method by which surveys on a large scale can be made, and in view of the vast mileage

of surveys yet requiring completion in the interests of navigation, it would be a waste of time to undertake large scale Coast surveys.

The scale on which a survey is to be conducted having been settled, it is manifestly superfluous to obtain more lines of soundings than can be represented on the paper. 100 soundings, which is the maximum number that can be placed with clearness on every square inch of paper, means that on a scale of one inch to the mile each sounding on the chart occupies an area representing eight acres of actual ground, whilst on a scale of six inches to the mile each sounding represents an area of a little less than a quarter of an acre, *i.e.*, of 100 feet square.

The following diagram represents as many soundings as can be placed legibly on a square inch of paper :—

16	15	15	13	13	14	12	11	10	9
14	15	14	14	13	13	12	11	9	8
15	15	14	17	16	14	13	10	10	9
16	16	17	18	16	12	11	8½	9	10
18	17	15	12	9	7½	7½	7½	9	10
19	16	12	9	5½	4½	5½	6½	8½	9
22	19	16	10	5½	5½	6½	7½	8½	10
20	16	12	7½	5½	6½	6½	7½	8½	10
18	15	11	9	7½	7	7½	8½	10	11
20	17	14	11	12	10	9	10	11	13

Little assistance in detecting excrescences on the bottom is afforded by the eye, when sounding in a boat, even in clear weather, on account of the observer being within five feet of the surface; none in turbid seas. If, therefore, there is no inequality in the soundings to cause suspicion, a shoal patch between two lines may occasionally escape detection.

Lines of soundings plotted as close as may be practicable on a scale of 6 inches to the mile would be 100 feet apart, and each line would be only 2 inches in actual width.

Thus, in a chart on a scale of one inch to the mile, an inequality of some acres in extent rising close to the surface, if it happened to be situated between two lines, might escape the lead; whilst in a chart on a scale of 6 inches, inequalities as large as battle-ships, if lying parallel to, and between the lines of soundings, might exist without detection if they rose abruptly from an otherwise even bottom.

General Coast charts should not, therefore, be looked upon as infallible, and a rocky shore should on no account be approached within the contour line of 10 fathoms, without taking every precaution to avoid a possible danger; and even with surveys of harbours on a scale of 6 inches to the mile vessels should avoid, if possible, passing over charted inequalities in the ground, as some isolated rocks are so sharp that the lead will not rest on them.

Blank spaces among soundings mean that no soundings have been obtained in these spots. When the surrounding soundings are deep it may with fairness be assumed that in the blanks the water is also deep; but when they are shallow, or it can be seen from the rest of the chart that reefs or banks are present, such blanks should be regarded with suspicion. This is especially the case in coral regions and off rocky coasts, and it should be remembered that in waters where rocks abound it is always possible that a survey, however complete and detailed, may have failed to find every small patch.

A wide berth should therefore be given to every rocky shore or patch, and this rule should be invariably followed, viz., that instead of considering a coast to be clear, unless it is shown to be foul, the contrary should be assumed.

2. *Fathom Lines a Caution.*—Except in plans of harbours that have been surveyed in detail, the five-fathom line on most Admiralty charts is to be considered as a caution or danger line against unnecessarily approaching the shore or bank within that line, on account of the possibility of the existence of undiscovered inequalities of the bottom, which nothing but an elaborate detailed survey could reveal. In general surveys of coasts or of little frequented anchorages, the necessities of navigation do not demand the great expenditure of time required for such a detailed survey. It is not contemplated that ships will approach the shores in such localities without taking special precautions.

The ten-fathom line is, on rocky shores, as before mentioned, another warning, especially for ships of heavy draught.

Charts where no fathom lines are marked must be especially regarded with caution, as it generally means that soundings were too scanty and the bottom too uneven to enable them to be drawn with accuracy.

Isolated soundings, shoaler than surrounding depths, should always be avoided, especially if ringed round, as there is no knowing how closely the spot may have been examined.

3. *Chart on largest scale always to be used.*—It sometimes happens that from press of work, only the copper plate of the larger scale chart of a particular locality can at once receive any extensive re-arrangement of coastline or soundings. This is an additional reason, besides the obvious one of the greater detail shown, why this largest scale chart should always be used for navigating.

4. *Caution in using Small Scale Charts.*—In approaching the land or dangerous banks, regard must always be had to the scale of the chart used. A small error in laying down a position means only yards on a large scale chart, whereas on a small scale the same amount of displacement means large fractions of a mile. This is particularly to be observed when coming to an anchor on a narrow ledge of convenient depth at some distance from the shore.

For the same reason bearings to objects near should be used in preference to objects farther off, although the latter may be more prominent, as a small error in bearing or in laying it down on the chart has a greater effect in misplacing the position the longer the line to be drawn.

5. *Graduation.*—All Plans are now being graduated in skeleton style before publication in order to facilitate easy reference to Astronomical positions; previously published plans are also graduated as opportunity offers. The graduation is, however, of necessity, often based upon imperfect information of a conflicting nature; for this reason, whenever an Astronomical position is quoted other than approximate (i.e., when seconds are given), it is necessary to quote also the number of the particular chart from which the position has been derived.

6. *Distortion of Printed Charts.*—The paper on which charts are printed has to be damped. On drying, distortion takes place from the inequalities in the paper, which greatly varies with different paper and the amount of the original damping; but it does not affect

navigation. It must not, however, be expected that accurate series of angles taken to different points will always exactly agree, when carefully plotted upon the chart, especially if the lines are to objects at some distance. The larger the chart the greater the amount of this distortion.

**7. Buoys.**—It is manifestly impossible that any reliance can be placed on buoys always maintaining their exact position. Buoys should therefore be regarded as warnings and not as infallible navigating marks, especially when in exposed positions; and a ship should always, when possible, be navigated by bearings or angles of fixed objects on shore and not by buoys.

**Light-buoys.**—The lights shown by light-buoys cannot be implicitly relied on, as, if occulting or flashing, the apparatus may get out of order, or the light may be altogether extinguished. These lights in the British islands are from 5 to 217 candle power.

**Cable-buoys.**—Cable-buoys marking the ends of submarine cables usually are spherical or can shaped, surmounted by a globe and occasionally a flag of varying shape. Below the topmark two *white fixed* lights placed horizontally.

**8. Lights.**—Circles drawn on charts round a light are not intended to give information as to the distance at which it can be seen, but solely indicate, in the case of lights which do not show the same characteristics or colours in all directions, the bearings between which the differences occur.

All the distances given in the Light Lists and on the charts for the visibility of lights are calculated for a height of an observer's eye of 15 feet. The table of distances visible due to height, at the beginning of each Light List, affords a means of ascertaining how much more or less the light is visible should the height of the bridge be more or less. The glare of a powerful light is often seen far beyond the limit of visibility of the actual rays of the light, but this must not be confounded with the true range. Again, refraction may often cause a light to be seen farther than under ordinary circumstances.

When looking out for a light at night, the fact is often forgotten that from aloft the range of vision is much increased. By noting a star immediately over the light a very correct bearing may be afterwards obtained from the standard compass.

The intrinsic power of a light should always be considered when expecting to make it in thick weather. A weak light is easily obscured by haze, and no dependence can be placed on its being seen.

The power of a light can be estimated by remarking its order, or candle power, as given in the Light Lists, and in some cases by noting how much its visibility in clear weather falls short of the range due to the height at which it is placed. Thus, a light standing 200 feet above the sea, and only recorded as visible at 10 miles in clear weather, is manifestly of little brilliancy, as its height would permit it to be seen over 20 miles, if of any power. (*See table in Light List before mentioned.*)

The distance from a light cannot be estimated either by its brilliancy or its dimness.

On first making a light from the bridge, by at once lowering the eye several feet and noting whether the light is made to dip, it may be determined whether the vessel is in the circle of visibility corre-

sponding with the usual height of the eye or unexpectedly nearer the light.

9. *Fog signals*.—Sound is conveyed in a very capricious way through the atmosphere. Apart from wind, large areas of silence have been found in different directions and at different distances from the fog signal station, in some instances even when in close proximity to it. The apparatus, moreover, for sounding the signal often requires some time before it is in readiness to act. A fog often creeps imperceptibly towards the land, and is not observed by the people at a station until it is upon them; whereas a ship may have been for many hours in it, and approaching the land. In such a case no signal may be made. When sound has to travel against the wind, it may be thrown upwards; in such a case, a man aloft might hear it when it is inaudible on deck. Under certain conditions of the atmosphere, when a fog signal is a combination of high and low notes, one of the notes may be inaudible.

The mariner should not assume—

- a. That because he fails to hear the sound, he is out of hearing distance.
- b. That, because he hears a fog signal faintly, he is at a great distance from it.
- c. That, because he hears the sound plainly, he is near it.
- d. That, because he does not hear it, even when in close proximity, the fog signal has ceased sounding.
- e. That the distance from and the intensity of the sound on any one occasion, are a guide to him for any future occasion

Taken together, these facts should induce the utmost caution in closing the land in fogs. The lead is generally the only safe guide.

10. *Tides and Tidal Streams*.—In navigating coasts where the tidal range is considerable, caution is always necessary. It should be remembered that there are indraughts to all bays and bights, although the general run of the stream may be parallel to the shore.

The turn of the tidal stream off-shore is seldom coincident with the time of high and low water on the shore. In open channels, the tidal stream ordinarily overruns the turn of the vertical movement of the tide by about three hours, forming what is usually known as tide and half-tide, the effect of which is that at high and low water by the shore the stream is running at its greatest velocity.

In crossing a bar or shallow flats, Tidal diagrams to show the height of the tide at any time for any place, given in the Tide Tables, will be found of great assistance in calculating how much the water has risen or fallen at any hour of the tide.

On coasts where there is much diurnal inequality in the tides, the amount of rise and fall can never be depended upon, and additional caution is necessary.

The datums used on the charts of different nations vary considerably. That adopted for the Admiralty charts founded on surveys carried out by the surveying vessels of the Royal Navy is, in waters where the diurnal inequality is small, the level of mean low water springs, and in waters where the diurnal tides are considerable, the level of Indian spring low water.

As, however, a very long series of tidal observations is required before either of these levels can be definitely determined, and as the chart datum depends, in most cases, on a few weeks' observations only,

the datums adopted must always be considered as approximate, and differ, in some cases, considerably from the theoretical datum.

Where Admiralty charts are founded on the charts of other nations, the datum is that used by the original authority. This may be mean low water springs (Denmark, Norway, Japan, &c.), mean low water (Holland, U.S. Atlantic coast, &c.), mean lower low water (U.S. Pacific coast, Philippines, &c.), a definite distance below mean low water springs (Germany), or the lowest possible low water (France, Spain, &c.). All these datums must be considered as approximate only.

Whenever it is known, a comparison between mean low water springs or Indian spring low water and the datum is given on Admiralty charts.

It should also be remembered that at times the tide falls below the level of mean low water springs. This always occurs on the coasts of Europe at the equinoxes, but in other parts of the world, and especially in the tropics, such periodic low tides may coincide more frequently with the solstices. Wind or a high barometer may produce it at any time, and the amount varies with locality. When the moon's perigee coincides with the full or new moon the same effect is often produced.

*Caution.*—From the above remarks it will be seen that the depths shown on Admiralty charts are not always the least depths that will be found to exist, due to the fact that the level of the chart datum is, in most cases, above the level to which the tide may fall.

**11. Arrows** on charts only show the most usual or the mean direction of a tidal stream or current. It must never be assumed that the direction of a stream will not vary from that indicated by the arrow. In the same manner, the rate of a stream constantly varies with circumstances, and the rate given on the chart is merely the mean of those found during the survey, possibly from very few observations.

**12. Fixing position.**—The most accurate method of fixing a position relative to the shore is by angles between well-defined objects on the chart. All ships are supplied with a station-pointer, and this method should be used whenever possible.

Two things are, however, necessary to its successful employment: First, that the objects be well chosen; and, second, that the observer is skilful and rapid in his use of the sextant and station-pointer.

For the former, reference can be made to the pamphlet on the use of the station-pointer, which is in every chart box; the latter is only to be obtained by practice.

It will readily be seen that in war time, when the compass may be knocked away, or gun-fire may make it undesirable to expose the person more than necessary, a sextant offers great advantages, as angles can be obtained from any position whence the objects are visible. It is this contingency that makes it especially desirable that all navigating officers should become expert in this method of fixing a ship's position.

In many narrow waters also, where the objects may yet be at some distance, as in coral harbours or narrow passages among mud banks, navigation by sextant and station-pointer is invaluable, as a true position can only be obtained by its means. A small error in either taking or plotting a bearing under such circumstances may put the ship ashore.

It is not intended that the use of the compass to fix the ship should be given up; there are many circumstances in which it may be usefully employed, but errors more readily creep into a position so fixed. In all cases where great accuracy of position is desired, angles should invariably be used, such as the fixing of a rock or shoal, or of additions to a chart of fresh soundings or new buildings. In all such cases angles should be taken to several objects, the more the better; but five objects is a good number, as the four angles thus obtained not only prevent any errors, but they at once furnish a means of checking the accuracy of the chart itself. In the case of ordinary soundings, it is only necessary to take a third angle now and then; firstly, to check the general accuracy of the chart, as above stated; secondly, to make certain that the more important soundings, as at the end of a line, are correctly placed.

Sometimes, when only two objects are visible, a compass bearing and sextant angle may be used with advantage.

In passing near a point of land, or an island, the method of fixing by doubling the angle on the bow is invaluable. The ordinary form of it, the so-called "four-point bearing," when the bearing is taken four points on the bow and on the beam, the distance from the object at the latter position being the distance run between the times of taking the two bearings, allowing for current, gives an excellent fix for a departure but does not ensure safety, as the point and probably the rocks off it are abeam before the position is obtained.

By taking the bearings of two points and four points on the bow, a very good position is obtained before the object is passed; the distance of the latter at the second position being, as before, equal to the distance run in the interval, allowing for current.

This is, however, only strictly true if the current is directly with or against the course of the ship. If a cross current has to be allowed for, the results by this method may be altogether erroneous and misleading. The following example shows in a tabular form the errors that might be produced by accepting the distance run in the interval, allowing for current, as the distance of the object at time of second bearing.

Example: A vessel steering East sights a light bearing E.N.E., or two points on the bow; one hour after, having run in the interval 10 miles by log, the light bears N.E., i.e., she has doubled the angle on the bow. Current, in all cases, at the rate of 2 miles an hour.

Direction of Current	Distance run between 1st & 2nd Bearings		Distance of Light at 2nd Bearing	Direction of Current	Distance run between 1st & 2nd Bearings		Distance of Light at 2nd Bearing
	By Log	Allowing for Current			By Log	Allowing for Current	
	Miles	Miles	Miles		Miles	Miles	Miles
East -	10	12	12	West -	10	8	8
E.N.E. -	10	11.8	10	W.S.W. -	10	8.2	10.2
N.E. -	10	11.4	8	S.W. -	10	8.7	11.9
N.N.E. -	10	11	6.2	S.S.W. -	10	9.4	13.6
North -	10	10.2	5.3	South -	10	10.2	14.7
N.N.W. -	10	9.4	4.9	S.S.E. -	10	11	15
N.W. -	10	8.7	5.3	S.E. -	10	11.4	14.7
W.N.W. -	10	8.2	6.1	E.S.E. -	10	11.8	13.8

The following rule should be observed in all cases of a cross current, viz. :—

When the angle between the second bearing and the course made good (over the ground) is double the angle between the first bearing and the course made good (over the ground) the distance from the object is equal to the distance made good (over the ground) between the times of the first and second bearings.

To get a reliable result the difference between the first bearing and the course made good (over the ground) should never be less than  $20^\circ$ . It follows, therefore, that it is necessary, before observing the first bearing, to decide upon the course being made good (over the ground). This may be done as follows, viz. :—

From any point, A, on the chart draw a line A B, representing by its direction the course steered and by its length the speed through the water. From the point B, draw another line, B C, representing in a similar manner the estimated direction and rate of the current, &c., to be allowed for. Then a line joining the points A and C will represent in the same manner the course and speed which are being made good (over the ground).

A table of factors, by which to multiply the distance run, to obtain the distance of the object when any number of degrees between the two bearings has been observed, is supplied with all chart sets.

The use of a danger angle in passing outlying rocks with land behind should also not be forgotten. In employing this method, however, caution is necessary, as should the chart be not accurate, i.e., should the objects selected be not quite correctly placed, the angle taken off from it may not serve the purpose. It should not, therefore be employed when the survey is old or manifestly imperfect.

In fixing by the compass, it must always be remembered that two bearings only are liable to error. An absolute error may be made in either bearing observed; errors may be made in applying the deviation; or errors may creep in in laying them on to the chart. For these reasons, a third or check bearing of some other object should be taken, especially when near the shore or dangers. The coincidence of these three lines will prevent any mistakes.

Amongst astronomical methods of fixing a ship's position, attention is drawn to the great utility of Sumner's method. A Sumner line, that is, a line drawn through the position (obtained by an assumed latitude or longitude) at right angles to the bearing of the sun, as obtained from the azimuth tables, gives at times invaluable information, as the ship must be somewhere on that line, provided the chronometer is correct. A deep cast of the lead at the same time may often serve to give an approximate position on the line. An early and very accurate position can also be obtained by Sumner's method, by getting a Sumner line by a bright star at daylight when the horizon is well visible, and another Sumner line by the sun when a few degrees above the horizon, or, better still, by observing two or more stars at twilight. The Sumner lines thus obtained will, if the bearing of sun and star differ three points or more, give an excellent result.

**13. Change of Variation of the Compass.**—The gradual change in the variation must not be forgotten in laying down positions by bearing on charts. The magnetic compasses placed on the charts for the purpose of facilitating plotting become in time slightly in error, and in some cases, such as with small scales, or when the lines are long the displacement of position from neglect of this change may



be of importance. The compasses are re-engraved when the error amounts to a quarter of a point, but the chart plates cannot be corrected more frequently from the impossibility of making alterations often on one spot in a copper plate.

The geographical change in the variation is in some parts of the world sufficiently rapid to need consideration. For instance, in approaching Halifax from Newfoundland the variation changes  $10^{\circ}$  in less than 500 miles, and in the English Channel about  $5^{\circ}$  in 400 miles. The Variation Chart should be consulted on this head.

On certain general charts embracing large areas with considerable change of variation, true compasses are placed instead of magnetic compasses, the variation being shown by *isogonic lines* (curves of equal magnetic variation), in a similar manner to the Variation Chart. One or two *isogonic lines* are also sometimes placed on charts, in addition to the magnetic compasses, in order to indicate the general direction of these curves, and thus facilitate the determination of the variation to be employed in portions of the chart not in immediate proximity to any one of the engraved compasses.

**14. Local Magnetic Disturbance of the Compass on board Ship.**—The term "local magnetic disturbance" has reference only to the effects on the compass of magnetic masses external to the ship in which it is placed. Observation shows that such disturbance of the compass in a ship afloat is experienced only in a few places on the globe.

Magnetic laws do not permit of the supposition that it is the visible land which causes such disturbance, because the effect of a magnetic force diminishes in such rapid proportion as the distance from it increases that it would require a local centre of magnetic force of an amount absolutely unknown to affect a compass half a mile distant.

Such deflections of the compass are due to magnetic minerals in the bed of the sea under the ship, and when the water is shallow, and the force strong, the compass may be temporarily deflected when passing over such a spot, but the area of disturbance will be small, unless there are many centres near together.

It is very desirable that whenever a ship passes over an area of local magnetic disturbance, the position should be fixed, and the facts reported as far as they can be ascertained.

**15. Use of Oil for Modifying the Effect of Breaking Waves.**—Many experiences of late years have shown that the utility of oil for this purpose is undoubted, and the application simple.

The following may serve for the guidance of seamen, whose attention is called to the fact that a very small quantity of oil, skilfully applied, may prevent much damage both to ships (especially the smaller classes) and to boats, by modifying the action of breaking seas.

The principal facts as to the use of oil are as follows:—

1. On free waves, *i.e.*, waves in deep water, the effect is greatest.
2. In a surf, or waves breaking on a bar, where a mass of liquid is in actual motion in shallow water, the effect of the oil is uncertain, as nothing can prevent the larger waves from breaking under such circumstances; but even here it is of some service.
3. The heaviest and thickest oils are most effectual. Refined kerosene is of little use; crude petroleum is serviceable when nothing

else is obtainable; but all animal and vegetable oils, such as waste oil from the engines, have great effect.

4. A small quantity of oil suffices, if applied in such a manner as to spread to windward.

5. It is useful in a ship or boat, both when running, or lying to, or in wearing.

6. No experiences are related of its use when hoisting a boat up in a sea-way at sea, but it is highly probable that much time and injury to the boat would be saved by its application on such occasions.

At anchor, when the sea is sufficient to render it difficult to hoist up or in boats, oil bags from forward or from the swinging booms have been found to render the sea alongside comparatively smooth.

7. In cold water, the oil, being thickened by the lower temperature, and not being able to spread freely, will have its effect much reduced. This will vary with the description of oil used.

8. The best method of application in a ship at sea appears to be: hanging over the side, in such a manner as to be in the water, small canvas bags, capable of holding from one to two gallons of oil, such bags being pricked with a sail needle to facilitate leakage of the oil.

The position of these bags should vary with the circumstances. Running before the wind they should be hung on either bow—*e.g.*, from the cathead—and allowed to tow in the water.

With the wind on the quarter the effect seems to be less than in any other position, as the oil goes astern while the waves come up on the quarter.

Lying to, the weather bow and another position farther aft seem the best places from which to hang the bags, with a sufficient length of line to permit them to draw to windward, while the ship drifts.

9. Crossing a bar with a flood tide, oil poured overboard and allowed to float in ahead of the boat which would follow with a bag towing astern, would appear to be the best plan. As before remarked, under these circumstances the effect cannot be so much trusted.

On a bar with the ebb tide it would seem to be useless to try oil for the purpose of entering.

10. For boarding a wreck, it is recommended to pour oil overboard to windward of her before going alongside. The effect in this case must greatly depend upon the set of the current, and the circumstances of the depth of water.

11. For a boat riding in bad weather from a sea anchor, it is recommended to fasten the bag to an endless line rove through a block on the sea anchor, by which means the oil is diffused well ahead of the boat, and the bag can be readily hauled on board for refilling if necessary.

12. Towing a vessel in a heavy sea, oil is of the greatest service, and may prevent parting the hawser. Distribute from the towing vessel forward and on both sides; if used only aft the tow alone gets the benefit.

### 16. Concise Rules for Revolving Storms:—

1. Revolving storms are so named because the wind in these storms revolves round an area of low pressure situated in the centre. They have also local names, and are termed hurricanes in the West Indies

and South Pacific Ocean; cyclones in the Indian Ocean, Bay of Bengal, and Arabian Sea; and typhoons in the China Sea.

2. In these storms the wind always revolves the same way in the same part of the world, that is, against the movement of the hands of a watch in the northern hemisphere, and with the hands of a watch in the southern hemisphere. The wind does not revolve in circles, but has a spiral movement, inwards, towards the centre.

3. Revolving storms have also, as a general rule, a progressive movement. Within the tropics they usually move from east to west at first, and then curve towards the pole of the hemisphere in which the storm is generated, and afterwards move from west to east.

4. The track which the centre of the storm takes is called the path of the storm, and the portion of the storm-field on the right of the path is known as the right-hand semicircle, and that on the left as the left-hand semicircle of the storm.

5. In the right-hand semicircle, if the observer be stationary, the wind will always shift to the right, and in the left-hand semicircle to the left. This law holds good in both hemispheres.

6. If a vessel be so situated in a storm that running before the wind the path of the advancing storm will be crossed, this is considered to be the dangerous semicircle. This will always be the right-hand semicircle in the northern hemisphere, and the left-hand in the southern.

7. These storms are most frequent in the northern hemisphere from July to November, and in the southern hemisphere from December to May. In the Bay of Bengal and Arabian Sea they, however, occur most frequently about the time of the change of the monsoon.

8. The area over which revolving storms have been known to extend varies in diameter from 20 miles to some hundreds of miles, and their rate of movement in the West Indies averages about 300 miles a day; in the China Sea, Bay of Bengal, and Arabian Sea about 200 miles a day; and in the Indian Ocean from 0 to 200 miles a day, the more stationary storms occurring at the beginning and end of the hurricane season.

9. The indications of the approach of a revolving storm are (1) an unsteady barometer, or even a cessation in the diurnal range, which is constant in settled weather; (2) a heavy swell not caused by the wind then blowing; (3) an ugly, threatening appearance of the sky.

10. In order to judge what is the best way to act if there is reason to believe a storm is approaching, the seaman requires to know (a) in which direction the centre of the storm is situated, (b) in which semicircle the ship is situated.

11. As these points cannot be determined if a vessel is moving with any speed through the water, the first proceeding should be to "stop" or "heave to," and, as it is always best to assume, at first, that the vessel may be in the dangerous semicircle, she should be hove to on the starboard tack in the northern hemisphere, and on the port tack in the southern.

12. If an observer faces the wind the centre of the storm will be from 12 to 8 points on his right hand in the northern hemisphere, and on his left hand in the southern hemisphere; 12 points when the storm begins; about 10 points when the barometer has fallen three-tenths of an inch, and about 8 points when it has fallen six-tenths of an inch or upwards.

13. If the wind shifts to the right the vessel is in the right-hand semicircle, if to the left in the left-hand semicircle, and, if the wind is steady in direction, but increasing in force, she is in the direct path of the storm.

14. If the seaman has reason to think that his vessel is in the direct path of the storm he should run with the wind on the starboard quarter in the northern, and on the port quarter in the southern, hemisphere until the barometer has ceased falling. If she is in the right-hand semicircle in the northern hemisphere she should remain hove to on the starboard tack, but if in the southern hemisphere run with the wind on the port quarter; if she is in the left-hand semicircle in the northern hemisphere she should run with the wind on the starboard quarter, but if in the southern hemisphere remain hove to on the port tack.

15. Should a vessel not have sufficient room to run when in the least dangerous semicircle, she should heave to on the port tack in the northern, and on the starboard tack in the southern, hemisphere.

16. If in a harbour or at anchor the seaman should be just as careful in watching the shifting of the wind and ascertaining the direction of the centre, as by so doing he will be able to tell on which side of the path of the storm he is situated, and be able to act according to circumstances.

17. Should the centre of a storm pass over a vessel, the wind, after blowing furiously in one direction, ceases for a time, and then blows with equal fury from the opposite direction. This makes a confused pyramidal sea, which is especially dangerous.

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INDEX TO  
ADMIRALTY PUBLISHED CHARTS  
ALLUDED TO IN THIS WORK

A number against a name thus, P. Khell 1502, shows a separate plan of the place is published bearing that number. A star against a name thus, Rhodes \*, shows a plan is published on chart shown by diagram to embrace it. A number and a star thus, Tenedos 1608 \*, shows a plan is published with others on a sheet of that number. For details of scales, prices &c. of the separate sheets see Admiralty Catalogue.





For all details of the Lights and Fog Signals which are included in this work, seamen should consult the Admiralty List of Lights, Part V. This List is published early in every year, corrected to the preceding 31st December.



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# THE MEDITERRANEAN PILOT.

## VOL. IV.

### CHAPTER I.

GENERAL REMARKS.—GREECE.—BULGARIA.—TURKEY.—TURKISH  
BUOYAGE SYSTEM.—WINDS AND WEATHER.—CURRENTS.—  
TIDES.—VARIATION.—TELEGRAPH.—STANDARD TIME.—COAL.  
—PASSAGES.

**GENERAL REMARKS.**—The portion of the Mediterranean sea described in this volume, commences at Cape Matapan on the west, and includes the Ægean sea, together with the adjacent coasts of Greece, Bulgaria, and Turkey as far as the island of Rhodes and Cape Alupo on the east; including also the island of Crete or Candia. 5

**ÆGEAN SEA.**—The Ægean sea, so named by the ancients, comprises that part of the Mediterranean, which, situated northward of Crete, is bounded on the west by the coast of Greece, on the north by the coasts of Greece and Bulgaria, and on the east by the coasts of Turkey, and contains the numerous and interesting islands commonly 10 known as the Grecian archipelago.

The islands are divided into two principal groups, the Cyclades and the Sporades. The Cyclades (pronounced Kiklades), so named from their encircling the island of Delos—the birthplace of Artemis (Diana) and Apollo—are situated on the western side of the sea. The Sporades, 15 which derive their name from the word meaning sown or scattered, are situated chiefly on the eastern side of the sea. The exceptions are Skyros and the Skopelos islands, lying north-eastward of Eubœa, and known as the Northern Sporades.

All the islands are high; many are of volcanic origin; others are composed of white marble, of which the Parian from Paros is often mentioned by ancient writers. Some are fertile and picturesque, whilst others, mostly the smaller ones, are mere masses of rock, and destitute of vegetation. Their productions consist principally of wine, oil, figs, raisins, and fruits, especially the lemon and orange; sponges 20 are found in the surrounding waters.

The coasts of Greece and Turkey are mountainous, deeply indented by gulfs, and contain many excellent harbours. The rivers that empty

*General charts 2836a, b.*

into the *Ægean* sea, are more deserving of notice from their classical associations, than from their commercial importance; all are obstructed at their entrance by shoals, and few will admit boats.

**Nomenclature.**—In this volume, certain places in Turkey and  
5 Greece have their ancient names bracketed in italics with their present names. Some places, belonging to Greece, have their present local names, in ordinary type, bracketed against those which mariners are more familiar with. It is the intention to adopt these local Greek names, solely, when seamen are used to them.

10 **GREECE.**—The kingdom of Greece, so far as affected by this volume, includes the portion of the European coast from Cape Matapan to the entrance to the Kara Su river, about 5 miles eastward of Kalamuti point, including the islands of Crete, Eubœa, and all the islands in the *Ægean* sea known as the Grecian archipelago except the  
15 Southern Sporades, Tenedos, and Imbros.

**Population.**—The total population of Greece and the islands belonging to Greece was officially estimated to be 4,780,000 in 1914.

**Imports.**—The principal imports into Greece are timber, iron, cotton, wool, and silk manufactures, cotton yarn, grain, live stock,  
20 sugar, rice, salted goods, raw hides, sulphur, coal, coke, leather, machinery, paints, paper, medicines, and chemicals. The value of the imports in 1913 amounted to £7,146,277.

**Exports.**—The principal articles exported from Greece are currants, lead, olive oil, wine, brandy, oranges, lemons, figs, emery, mineral  
25 ores, valonea, silk in cocoons, tobacco, cotton, sponges, soap, and wax. The value of the exports in 1913 was £4,756,858.

Greece manufactures also for home consumption, glass, paper, wrought iron, dyes, and wool.

**Grecian mining industries.**—Generally speaking, these are  
30 only carried on, on the small islands of the Cyclades and near the coast line, whence the transportation of the ores can be effected by the most simple means. The productions in 1913 were as follows:—Iron ore, 423,569 tons; manganiferous iron ore, 21,477 tons; zinc ore, 25,862 tons; lead, 24,918 tons; magnesite, 52,502 tons; nickel, 16,416 tons;  
35 salt, 10,215 tons. The output of marble in 1906 amounted to 2,522 cubic metres.

**Greek currency.**—This consists of notes, bronze, nickel, silver, and gold coins. Notes, nickel, and bronze are most in use, silver coins are rare, and gold coins very rare.

40 The bronze coins consist of one lepton, 2, 5, and 10 leptá pieces, the latter being nearly equal to one penny.

Nickel coins of 5, 10, and 20 leptá.

The silver coins are 20 and 50 leptá, one drachma (franc), 2 and 5 drachmæ pieces, the latter nearly equal to 4s.

Gold coins of 10 and 20 drachmæ.

The notes issued are 5, 10, 25, 100, 500, and 1,000 drachmæ.

**Greek weights and measures.**—The metric system has been established in Greece by Royal Decree, but is acted upon only to a very limited extent, the following system being in general use:—

400 drams	...	...	...	=	1 oke	
44 okes	...	...	...		1 kantar	
18 kantars	...	...	...		1 ton	10
1 kilo of wheat	...	...	...		22 okes	
1 botza	...	...	...		2 okes	
48 okes	...	...	...		1 Greek barrel	

The following are the equivalents of the Greek in English weights and measures:—

9 Greek drams	...	...	...	=	1 oz. (avoir.)	
1 oke	...	...	...		2·84 lb. (avoir.)	
39½ okes	...	...	...		1 imperial cwt.	
18 kantars	...	...	...		1 ton	
1 kilo	...	...	...		1 bushel	20
3⅔ okes	...	...	...		1 imperial gallon	
3⅞ stremmas	...	...	...		1 acre	
1 pike (land measure)	...	...	...		25½ inches	
1 pike (cloth measure)	...	...	...		27 inches	
1 royal pike	...	...	...		1 French metre	25

**Railways.**—The Greek railways connect the Piræus with Athens, Lavrion, Corinth, Patras, Olympia, Argos, Tripolitza, Nauplia, and Kalamata. A line has also been completed from Athens to Larissa, and thence to connect with the Saloniki-Monastir railway at Plati, so connecting through Servia with the General European system.

Volo is also connected with Larissa and Kalabakka.

Saloniki is in direct railway communication with all parts of the Continent of Europe, viâ Nisch and Belgrade, with Constantinople viâ Dédé Agatch, and with Monastir.

In 1916 there were 993 miles of railroad open for traffic, and a line of about 70 miles in length is under construction.

**Shipping.**—The Greek shipping included in 1914, 440 steamers, of 900,000 aggregate tonnage; motor-boats and launches have been imported almost wholly from the United Kingdom. The shipping at the Piræus is about three-fifths of the total for the whole of Greece.

**Docks.**—There are two dry docks at the Piræus, and a floating dock at Salamis, also patent slips at the Piræus and Syra. See Appendix I.

**Naval dockyards and establishments.**—The principal naval dockyard belonging to the Greek Government is on the island of Salamis, near the Piræus. There is a naval dockyard at Poros island, on the south shore of the Gulf of Athens. Crete possesses a naval dock-  
5 yard at Suda bay, which is, however, practically abandoned.

**Pilots.**—Greek pilots give their steering orders in accordance with the French system, i.e., Port means that the ship's bow is to turn to port, &c.

**Consular stations.**—The British Minister, Envoy Extraordi-  
10 nary, is stationed at Athens, a British Consul-General at Saloniki, Consuls at Khania, Piræus, Syra, and Volo. Vice-Consuls at Athens, Kavala, Khios, Laurium (Lavrion), Megalo Kastron, Piræus, Saloniki, Samos, Syra, and Thaso. Consular Agents at Rhithymno, Santorin, and Seriphos, and a Pro-Consul at Saloniki.

**BULGARIA.**—The portion of the coast of Bulgaria included in this volume commences on the west, near the mouth of the Kara Su river, a little eastward of Kalamati, and extends to the eastward to the north side of the entrance to Lake Bori.

**Population.**—The population of Bulgaria was estimated at  
20 4,752,997 in 1914.

**Trade.**—In 1913 the imports were valued at £6,850,042, and the exports at £3,728,185.

**Currency.**—The currency in use in Bulgaria is based on the lev of 100 stotinki, the value of the lev in British currency being  
25 9½d.

The coinage is as follows: Gold coins of 5, 10, 20, and 100 leva; silver coins of one, 2, 5, leva and 50 stotinki; nickel coins of 10 and 20 stotinki; and bronze coins of 2½, 5, and 10 stotinki.

**Weights and measures.**—The metric system has been estab-  
30 lished by law under the French names, but the old Turkish weights and measures are still largely used by the peasants.

**Railways.**—Dédé Agatch is in direct railway communication with Constantinople, Saloniki, and with the European system of railways viâ Nisch and Belgrade.

**Ports.**—Dédé Agatch is one of the principal ports of call used by  
35 the numerous lines of steamers plying regularly between the ports and islands of the Ægean.

**TURKEY.**—The Turkish possessions included in this volume commence on the north at a point on the north side of Lake Bori, and  
40 extend along the eastern shore of the Ægean sea to Cape Alupo, including the islands of Tenedos and Imbros.

*General charts 2836a, b.*

**Asia Minor.**—Asia Minor is an indefinite geographical name, which came into use in the dark ages. It corresponds roughly to the Turkish Anadol (Anatolia), but the latter excludes Karamania, while Asia Minor includes it. Both terms cease to apply east of the Euphrates.

Asia Minor consists of a lofty oblong central plateau, projecting from the main mass of the continent of Asia, together with a fringe of coast land. The plateau is about 3,000 to 4,000 feet above sea-level, interspersed with many lofty, generally conical peaks; it is a great limestone plateau through which rise volcanic cones, and is bordered by a rim of mountains which divide it from the coast lands. This mountain rim is usually of considerable breadth, and is generally very much broken and cut up by watercourses. On the west this mountain rim is not so distinctly marked as on the north and south; it is, however, always present.

The coast valleys on all three sides of the plateau, and their extensions up the course of the rivers that come down from the plateau, are extremely fertile, but as a rule are haunted by malarial fever. Beside Ephesus, for example, at the lower end of the Kuchuk Mendere, the area of cultivation has been greatly extended during the last 40 years, and the result has been that this district is no longer infamous on account of the malaria danger, as it formerly was. It remains, however, very enervating.

The breadth of the coast lands varies very greatly. In some places there is no interval between the mountains and the sea, or only room for a road. In other places the coastal plain is of considerable breadth, as, for example, in Pamphylia on the south and in Bithynia on the north, and the low valleys continue up into the outer edge of the plateau along the course of many small streams and several considerable rivers.

The mountains which edge the plateau on the north possess a character of their own. They lie in a well-marked double ridge, consisting of two chains of mountains parallel to one another, with important river valleys and lines of communication between them.

By far the most characteristic edge of the plateau is that on the south, formed by the great range of mountains which has been famous, under the name of Taurus, from the very earliest historical period. Taurus has been always recognised as a political and linguistic boundary, and the countries "on this side of Taurus" and "beyond Taurus" have commonly been separated in government, and probably in the racial character of the inhabitants, from the region of the central plateau.

Taurus is usually called a mountain ridge, but it is really an elevated plateau from 6,000 to 9,000 feet above the sea. In breadth it varies greatly, generally not less than 50 miles, but in some cases much more,

according as the mass of the elevated plateau extends outward towards the north or approaches close to the sea on the south.

The central and eastern part of the great plateau is a level plain, but the western part is occupied by what may be called the Phrygian mountain region. The latter belongs to the plateau proper, and is clearly distinguished to the traveller from the mountain rim. It extends from about the longitude of Ushak to about 30 miles east of Afium Kara Hissar. The mountains which compose it have quite a different character from those of the Taurus region. They are, in general, bare and of no great height above the level of the plateau, and they are varied by wide and very fertile open river valleys. There are, however, several lofty ridges which interpose considerable, indeed almost insuperable, difficulties, to direct communication by road.

The distinction between these two parts of the plateau—the western and the eastern—is very important, alike as regards communication and as regards weather. The central plain is the most typical part of the plateau, but the Phrygian hills have their own special character. This great open treeless plain is extraordinarily level; it is varied by a number of isolated mountains, almost all of which are volcanic cones, rising through the level limestone plateau like islands in the sea. There is, however, an exception to this form of the mountains—Boz-Dagh is a bare, comparatively low ridge which runs out from the Phrygian mountains in a south-easterly direction for about 45 miles.

**Rainfall, &c.**—There is a marked difference between the amount and times of rainfall on the central plain and in the Phrygian mountain region, the two diverse parts of the main plateau. The open plain is very dry: not that there is any great lack of moisture on the annual average, but that the moisture falls only in certain seasons, and usually in such quantity as to do harm rather than good. On the other hand, the Phrygian mountain region enjoys an abundant rainfall, well distributed over the year, and often very heavy. In some parts it may be called a moist region; take the two great centres Afium Kara Hissar and Yalovach (Antioch).

There has been very serious destruction of forests in the mountains; a process which has been going on through the carelessness and indifference of the semi-Turkish nomads, wherever woods continued to live in the mountain region. Formerly the roots of the trees detained the water, and the rainfall benefited the country which it now injures.

In winter the weather is very severe, alike in the Phrygian mountain regions and on the central plain. Snow lies for a considerable time.

In summer the weather of the great plains, on the whole, is extremely pleasant and invigorating, except when the wind is in the south; but the north wind, always a dry and health-bringing breeze, blows very frequently.

As to the conditions of health on the central plateau, these are almost everywhere excellent. The atmosphere at this high altitude is fresh and invigorating: the heat by day, though often great, is rarely felt to be oppressive, and the cool nights always require the traveller to put on some extra covering, if he is in camp. Towns and houses, however, retain the heat, and are sometimes oppressive. Malaria is rare on the plateau, and though mosquitoes abound where there is water, they do not, as a rule, appear to be the kind that communicate the germ of malaria.

**Population.**—No census having been taken in recent years the population of the Turkish ports and islands mentioned in this volume are little more than estimates.

**Trade.**—In 1909-10 the imports into Turkey were estimated at £31,166,000, and the exports at £16,409,000.

**Turkish currency.**—The currency, with its British equivalents is as follows:—

	British equivalent.	
40 paras or one piastre ... ..	= 2·16d.	
100 piastres or one mejidie or lira turca (£T)	18s. 0·81d.	
The gold coins are:—		20
Lira ... ..	18s. 0·81d.	
Yarim or half-lira ... ..	9s. 0·40d.	
Cherek or quarter-lira ... ..	4s. 6·20d.	
The silver coins are:—		
Mejidie ... ..	3s. 7·36d.	25
Yarim ... ..	1s. 9·6d.	
Beshlik ... ..	0s. 10·9d.	
Ikilik (or 2 piastres) ... ..	0s. 4·32d.	
Piastre ... ..	0s. 2·16d.	
Half-piastre ... ..	0s. 1·08d.	30
The nickel coins are:—		
Piastre ... ..	0s. 2·16d.	
Half-piastre ... ..	0s. 1·08d.	
Quarter-piastre ... ..	0s. 0·54d.	
Five paras ... ..	0s. 0·27d.	35
Para ... ..	0s. 0·05d.	

The nickel coinage is at a discount. Foreign gold circulates freely.

**Turkish weights and measures.**—The metric system has been established by law, the standard of length being the arshin (equal to one metre), that of capacity the sulchek (equal to one litre), and that of weight the oke (equal to one kilogramme).

The old measures are as follows:—

*Measures of length.*—Three kinds of pik, namely, dra (for silks and drapery), equal to 24 kerat or 27 British inches; the halebi or arshin



(for surveying), equal to 27·9 inches; and the endaze (for all other manufactured goods), equal to 25·69 inches.

The berri equal to 1·03 British statute miles or 1,670 metres, and the agach or farsang of 3 berris.

- 5 *Measures of surface.*—Square kerat and pik, cane or reed of  $5\frac{1}{2}$  pik, and feddan equal to about one British acre.

*Measures of capacity.*—Killo of 2 jubbeh, of 2 sa, of  $5\frac{1}{2}$  rottol, of 12 okie, or 900 dirhem, equals 3·879 British imperial pecks or 7·758 imperial gallons. Fortin equals 4 killo.

- 10 *Liquid measures.*—The almud, of 8 oke, of  $5\frac{1}{2}$  okie, equals 1·152 British imperial gallons; the rottol, of 12 okie, equals 2·513 imperial pints; and the kantar equals 100 rottol.

*Weights.*—The oke, of 4 okie or 400 dirhem, equals 2·834lbs. av. or 1·286 kilo; the kantar, of 44 oke or 100 rottol, equals 124·702lbs. av.

- 15 The rottol equals 1·247lb. av. or 0·566 kilo.

**Railways.**—In Asia Minor, railways run northward and southward from Smyrna, the former after skirting the head of Smyrna bay and, making a detour of the western side of Mount Sipylus, to Mene-men, takes an easterly direction to Konia, connecting with the lines  
20 from Constantinople and Angora at Afiun Kara Hissar. From Konia the line extends to Karapuna and Aleppo, with branches to Mersina and Alexandretta. From Aleppo a line, with branches to various ports and towns, runs southward through Syria to Maan, and thence south-eastward to Medina.

- 25 A railway to Baghdad, in continuation of the line from Konia, mentioned above, has been partially constructed. It passes through Muslimiya, about 10 miles northward of Aleppo, and extends, at present, about as far as Ras-el-Ain, situated about 200 miles eastward, crossing the River Euphrates at Jerablus, some 60 miles north-eastward of  
30 Aleppo. From Baghdad, the line has been completed for a length of about 75 miles, as far as Samarra, leaving about 320 miles of railway to be constructed.

- Turkey.—Buoyage system.**—The starboard side of a channel is that side which would lie on the starboard hand of a ship  
35 approaching from seaward. That side of the channel which would lie on the port hand of a ship approaching the channel is consequently the port side of the channel.

Red conical buoys will be placed on the starboard side, and white can buoys on the port side of a channel or strait.

- 40 Small red and white spherical buoys, fitted with staffs, will be placed on shoals which occur in the middle of a channel or strait, and which can be passed on both sides by shipping.

Spherical buoys placed on a shoal lying in the middle of a channel will be furnished, depending on their condition, either with a red cylinder or other topmark.

In the case of a channel or strait which cannot conveniently be buoyed on both sides, a single row of either red or white buoys will be laid down. Some of the buoys forming this row may be conical and others can buoys. In order to enable the buoys inside the channel to be easily seen and distinguished, a beacon buoy will be placed at the entrance of the channel, where the nature of the background renders this necessary; the topmark will be entirely red, and the buoy red or white, according as it lies in the line of buoys marking the starboard or port side of the channel.

In the case of winding channels and inlets containing numerous and extensive shoals, where the fairway for shipping may be considered as divided into a number of disconnected zones, beacon buoys will be placed at the extremities of each zone, in order that the limits may be clearly perceived, and a reliable guide to shipping afforded.

As regards the fairway, both the topmarks and the other parts of the buoys on the starboard side must be painted red. On the port side, the topmarks red and their other parts white. The topmarks of the beacons on the shoals in the fairway, which can be passed on both sides by shipping, must be entirely red, the other parts being painted with horizontal red and white stripes.

The topmarks belonging to one zone will be distinguished from those of other zones by their form. In places of this kind light-buoys and fixed beacons of peculiar colour, and carrying special topmarks, can be used.

Reckoning from the entrance to the channel, the buoys on the starboard side will have odd numbers painted on them in black, and those on the port side even numbers. On the starboard side of a channel or strait a red-coloured staff or pole beacon, or an uncoloured mast beacon, will be placed. On the port side a white-coloured beacon without a staff, or an uncoloured perch beacon (the branched stump of a tree).

On shoals situated outside a channel, spar buoys, beacon buoys, any kind of buoy fitted with a staff, or fixed beacons will be placed on the shoal or in its vicinity. These buoys, with their topmarks, will always be painted red. The fixed beacons will have, as a rule, red topmarks, the remainder of the beacon, as occasion may require, will be painted white or red. Where their position renders it necessary, shoals will in some cases be marked by bell-buoys, light-buoys, or whistle-buoys. If it is only necessary to mark shoals on one side, as in the case of shoals extending from the shore, beacons either without topmarks or carrying special ones will be used.

*General charts 2836a, b.*

- Topmarks are used to indicate the direction in which the shoal lies. In the case of exceedingly small shoals, situated either inside or outside the channel, where it is not considered necessary to surround them with buoys, and where shipping can approach close to the beacons, the topmark will be a cylinder of height equal to its diameter. While this topmark may also be carried by a buoy marking a sunken vessel, it may not be used in any other place.

In the case of an extensive shoal, situated inside or outside the channel where it is considered necessary to place buoys, they will carry topmarks as described below:—

- |  |  |
|--|--|
| On a buoy or beacon on the north side of shoal | Two conical topmarks, each point upwards.          |
| On a buoy or beacon on the south side of shoal | Two conical topmarks, each point downwards.        |
| On a buoy or beacon on the east side of shoal  | Two conical topmarks, points away from each other. |
| On a buoy or beacon on the west side of shoal  | Two conical topmarks, points towards each other.   |

To indicate the position of a submerged wreck, conical buoys, truncated conical buoys, or cask or barrel buoys will be used; they will be painted green, and have in Turkish the word for "Wreck" written on them in white. These wreck buoys will carry a staff, and, according to their position, will exhibit a cylindrical topmark, or the conical shapes mentioned above.

To mark the position of telegraph cables green spherical buoys are used. On these buoys the word for "Telegraph" or the equivalent for letter "T" will be painted in white in Turkish character.

In order to indicate the limits of quarantine areas, yellow buoys or conical beacons must be used.

In order to denote the limits of areas temporarily closed to shipping, while appropriated for experiments or practice from guns and torpedoes, yellow cask or barrel buoys, fitted with small pennants, will be used.

**Patent slips.**—There are three small patent slips at Smyrna. See Appendix I.

**Barometer.**—The ordinary indications precede gales, and careful attention to the barometer, which generally rises with North and Easterly winds, and falls with those from the South and West, will render it almost impossible for seamen to be taken unawares. For signs of a Northerly gale, when entering the archipelago, see page 82.

The graduation of barometric scales in millibars having now been

largely introduced, the accompanying diagram is inserted to enable the mariner to convert millibars into inches, and vice versâ.



**WINDS.**—The predominant winds in the archipelago are from the northward, varying from North-West to North-East, and which increase in force towards the northern part; from the end of September to the end of May, these winds alternate with those from the South-Western quarter, which are more frequent when the winters are mild. (See also Meteorological tables for Megalo Kastron or Candia, Athens, Syra, Saloniki, and Smyrna, Appendix III.)

Winds from South-East to South-South-East are more frequent towards the end of June and in July, particularly in the channels near and on the coast of Asia; these winds, which increase gradually, are generally pleasant, though foggy in March and September. At the commencement of winter, there are at times heavy gales from this quarter. The most variable weather in the archipelago, is from the beginning of November to the end of March, and gales of wind which at times attain nearly the force of a hurricane, are during this period, the most frequent. A gale generally happens a little before the equinox in March, the wind being always southerly, and known in Greece as "The forty saints' storm." Both South-East and South-West winds blow frequently with great force near the solstices.

The Etesian wind or "Meltem" of the Turks, is the most frequent in the fine season; it almost invariably commences about the end of March, and continues until the end of August. It blows from the North or North-East, occasionally fresh, with a clear sky, but a misty horizon, which obscures the land at a long distance, except perhaps about sunset. When the summits of the mountains are capped with greyish clouds, this wind is likely to last for some days; it moderates in the evening and freshens again in the morning.

Northerly winds blow with much force, even in summer, and are usually cold, and obscure the horizon; should it come on to blow suddenly in the day at this season, it will probably be a fine night. Summer gales are almost always preceded by calms, with a dark appearance of the sea round the horizon. From the middle of October to the latter end of March, the breaking up of the summer and winter seasons, there is a continuation of unsettled weather with frequent gales, rain, and sleet. During this period, when the sky is obscured, and the grey clouds which collect in layers on the summits of the islands and mountains of the coast, are suddenly detached, it is a certain sign of a gale.

*General charts 2836a, b.*

Northerly winds are especially dangerous during the night when amongst the islands, as the weather may become overcast, with rain, hail, or snow, accompanied by a short heavy troublesome sea. When any signs of these gales appear, shelter should be sought under the lee  
5 of the islands, or in the nearest port.

In March and April, the Etesian winds alternate with strong Southerly winds, and in May with light breezes or calms, which are not so common in June, July, and August. In May and June, the sky is usually clear and serene, the weather fine and sea smooth, with  
10 land and sea breezes.

During September, the prevailing winds are southerly, but light, with calms. About the middle of October, a strong cold northerly wind is periodically expected, followed by southerly breezes till the end of the month. In November, strong southerly winds are prevalent;  
15 and in December, a little before or after the solstice, stormy winds blow from all directions, and ultimately from the northward; in January, northerly winds are mainly prevalent.

During winter, the winds are often influenced in an easterly or westerly direction by the gulfs or inlets on either coast; on the Euro-  
20 pean side, both northerly and southerly winds have a tendency to blow from the westward, and on the Asiatic side, from the eastward. Southerly winds often back round to the eastward, and blow hard between S.S.E. and E.S.E., with rain for several days; but more frequently, southerly winds suddenly shift round by east, to N.E. and  
25 North, and blow with great violence, and continue in that quarter for a long period until exhausted, seldom again shifting until completely blown out.

On changing from the southward round westward, it seldom remains for any length of time between W.S.W. and N.N.W., but should it  
30 remain in that quarter, the weather soon clears and becomes fine.

Winds from the South-West, or from the southern quarter, are not common in the northern part of the archipelago, but in the western part they blow at times during the summer. In winter, they are accompanied by thunder and lightning, and at times change suddenly  
35 in a squall to the North with a rough sea. When the sky is charged with clouds from the south-west, with lightning, and the barometer falling or low, the wind may with certainty be expected from that quarter, particularly during November, December, and January; at other periods, the South-West winds succeed those from the North,  
40 which back round by north-west, and west, with increased force, clear weather, and but little rain.

In general, during summer, and in fine weather in winter, land and sea breezes prevail in the different gulfs, especially in those of Smyrna, Nauplia, and Saloniki; the sea breeze, called the "Imbat," commences  
45 to enter the gulfs about 10h. a.m., and falls towards sunset; the land

*General charts 2836a, b.*

breeze springs up about 11h. p.m. The Imbat in the Gulfs of Nauplia and Smyrna is often strong, and in the latter it causes a short troublesome sea; but the land breeze is never very strong.

The winds on the coast of Anatolia and neighbouring islands are as follows: In the winter months, after a north-easterly wind, the sky becomes clear for a few hours, when it again gradually darkens, and in 12 or 15 hours, a gale from S.E. or S.S.E. will probably be blowing in the Gulf of Smyrna; from S.E. in the strait of Khios; and from S.S.E. and South along the coast. It generally comes on in the evening, but sometimes at night; towards morning it blows violently, and continues often till midnight, when it is succeeded by heavy rains, which last a few hours.

The wind will then suddenly shift to the S.W. with strong and violent gusts; after this, it moderates, and becomes showery and squally, veering to West and N.W., in which quarter it seldom blows hard, when with a heavy shower of rain or hail, it veers to N.N.E. or N.E. A few hours before this change takes place, the mountain tops are enveloped in dark and heavy clouds; though at times, this does not take place until the above change of wind is effected.

The mountains of Kara burnu peninsula are remarkable for this appearance; for after the winds begin to blow, the clouds collect on their south-western side, and resemble snow, when it blows violently in the Strait of Khios.

The Gulf of Sandarli or Chandarli, northward of that of Smyrna, is remarkable for these winds, they continue thus variable during the months of November, December, January, and February. In March the weather becomes mild, in May and June the sky is clear and serene, the regular Imbat or sea breeze begins to set in, and is succeeded by the land wind. Towards the latter end of June and in July, the sirocco winds blow occasionally. About the equinox, it will rain for a day or two, accompanied with thunder, after which it becomes calm and serene, continuing so throughout October; in November it again becomes variable with strong gales.

**White squalls.**—The Grecian archipelago is more particularly the scene of those sudden gusts of wind named white squalls, so called from their frequent occurrence under a cloudless sky, and their action in causing the sea to assume a white appearance. They are due to the wind rushing down from the high land on the leeward side, and striking the water at an angle when they churn up the sea and cut off the tops of the waves into a spray, which gives a peculiar appearance that once seen cannot be mistaken.

They are sometimes very violent, but their duration is short. They were particularly dangerous in the days of sailing vessels, but now that sailing ships have been almost entirely superseded by steamers, cause more inconvenience than danger.

**Climate.**—The archipelago is very dry, the drought continuing generally without interruption from May until the middle or end of August, when a small quantity of rain may fall to alternate again with some weeks of dry weather. November, February, and March are the rainy months; but December may often be substituted for November. The lowest degree of temperature in winter is seldom at freezing point, and the highest in summer seldom exceeds  $90^{\circ}$ .

For Meteorological tables, *see* Appendix III.

**Sea temperature.**—The high summer temperature of the surface of the Mediterranean sea is limited to a thin stratum, and then gives place to a uniform temperature, which extends downwards to the bottom. In the western basin, at a depth of 50 fathoms, the thermometer generally falls to  $55^{\circ}$  or  $56^{\circ}$ ; and below this depth, there is very little change down to 100 fathoms, where it usually stands at  $54^{\circ}$  or  $55^{\circ}$ ; thence to the bottom, however deep, the temperature continues constant, the water below 100 fathoms having absolutely the same temperature of  $54^{\circ}$  or  $55^{\circ}$  throughout.

In the eastern basin, the heat of the superficial stratum extends somewhat farther down; but the uniform temperature is always reached at less than 200 fathoms, and from this depth to the bottom (it may be at 2,000 fathoms), the temperature of  $56^{\circ}$  is found everywhere to prevail. In the archipelago the temperature is also constant at about  $54^{\circ}$  or  $55^{\circ}$  in depths of 100 fathoms and downwards; the intermediate depths between 100 fathoms and the surface, range from  $55^{\circ}$  to  $76^{\circ}$ , and sometimes in the waters of the enclosed gulfs and bays even to  $80^{\circ}$  and  $86^{\circ}$ .

During winter, on the other hand, the temperature is uniform or nearly so, from the surface to the bottom. It is obvious that the temperature varies with the seasons, and after the month of March, the solar influence begins sensibly to raise both sea and atmospheric temperature. It appears that a higher surface temperature prevails over the eastern basin generally, than over the western.

The above conditions differ completely from that which prevails in Oceanic areas generally; and contrast especially with that which is found in the Atlantic at similar depths, for there, after passing through the superheated stratum, the thermometer falls with the depth to  $36^{\circ}$ , though by no means at a uniform rate.

Later observations made by the Danish Oceanographic expedition in 1908-10, showed that the above conclusions were not strictly correct as regards the lower depths, but that "a bottom layer with both constant salinity and uniform temperature does not exist; the extensive layer of water, for which this was supposed to be the case, consists in reality of two essentially different layers, separated by a temperature minimum.

"In the Balearic sea this temperature minimum lies at a depth of from 440 to 540 fathoms, in the Tyrrhenian sea at about 1,000 fathoms,

*General charts 2836a, b.*

and in the Eastern Mediterranean as a rule between 540 and 800 fathoms. . . . Below this temperature minimum we meet the true bottom water . . . the temperature in this bottom layer not being constant but increasing downwards.

“ In the Levant the temperature minimum disappears. 5

“ In the *Ægean* sea the surface temperatures are very variable from one place to another, probably due to local causes, but this variability exists even in the deeper layers, due to the complicated system of depths in this sea.”\*

**NAVIGATION OF THE ARCHIPELAGO.**—The 10  
navigation of the archipelago, though easy, requires constant attention, and a place of shelter should always be kept in view, so that safety may be assured before dark in the event of an approaching gale, as the weather may become so thick that, amongst the labyrinth of islands, the land may hardly be seen in time to avoid it. In general, when 15  
bound up the archipelago, if there is the least appearance of a gale from the northward, there should be no hesitation in seeking temporary shelter at the nearest anchorage, for nothing can be gained by keeping at sea, and the vessel's position may become more critical as the weather gets worse. 20

A vessel may always anchor under the lee of an island with northerly winds, for though at times they blow with much violence, they never shift suddenly to the southward, and there is always a sufficient interval of moderate weather to permit leaving the anchorage. It is not the same, however, with southerly winds; with these winds, a sailing vessel 25  
should never anchor on the north side of an island, or any land, if it can possibly be avoided, as the winds from this quarter generally shift suddenly in a squall to the North or North-East, and blow with such violence that a vessel could not get under way.

A steam vessel, in case of necessity, anchoring on the north side of 30  
an island or point of land, should be in such a position as will enable her to leave with ease and facility at any moment. As southerly winds increase in force gradually, there is generally time to seek the requisite shelter.

**CURRENTS.**—The currents in the archipelago are irregular in 35  
strength and direction: in general they run to the southward, but are greatly influenced by the winds, and especially in the western part. As a general rule, the currents are always stronger during and after North-Easterly winds, than with those from the southern quarter.

When the winds are from North-East to East, the rapid current from 40  
the Dardanelles passes on both sides of the island of Lemnos, and runs towards the western part of the archipelago and through Doro channel with considerable velocity. It runs with great strength through Steno

\* Report of the Danish Oceanographical Expeditions of 1908-1910.—Johs. Schmidt, Ph.D.



pass (the narrow channel between Andros and Tinos islands), and through the wide channel which separates Nikaria from Mykoni, but is less rapid in Mykoni channel, which separates that island from Tinos.

5 On leaving these channels, and entering the south-western part of the archipelago, it loses its velocity, and between Cape Malea and Crete unites with the general westerly current, which is also more or less affected by the force and direction of the wind.

Besides the usual southerly set, there are local or eddy streams; thus to the northward of Thaso and Samothraki islands, the current has been  
10 observed to run strong to the eastward; at Tenedos, with a long continued southerly wind, the southerly current ceases for a time. In the Gulf of Smyrna, and particularly during summer, the strong sea breezes force the water towards the head of the gulf, causing at times, with the fall of the wind, a westerly set of  $1\frac{1}{2}$  miles an hour.

15 No exact law can be given with respect to these currents, more especially in the southern part of the archipelago and in the channels east and west of Crete. It sets almost continually to the southward, but it is, at times, irregular, and depends (as elsewhere) much on the force and direction of the winds, both local, and those at a distance when  
20 strong.

Thus, southerly gales (especially in autumn, when the water brought down by rivers is at its minimum) will entirely reverse the archipelago currents, causing a flow back to the northward, and through the Dardanelles and Bosphorus into the Black sea, instead of its usual direction  
25 out of that partly fresh-water basin. Southerly and south-westerly breezes, will likewise cause an easterly current in the southern part of the archipelago, which then uniting with that from the Dardanelles, greatly increases the southerly current between the islands of Kaso and Crete, and between Scarpanto and Rhodes.

30 The coast of Crete is subject to variable currents, being influenced greatly by local winds, but the descending currents from the Dardanelles and the encircling current from the coast of Egypt by Syria and Karamania, unite in causing a predominating southerly current throughout the archipelago, and south-westerly current on the coast of  
35 Crete, of from half a knot to  $1\frac{1}{2}$  miles an hour. These currents have been invariably found to be superficial, having a depth of from 30 to 50 fathoms only, and decreasing in strength with the depth. The only rule, therefore, that can be given as a caution to the navigator, especially for the southern part of the archipelago and the channels approach-  
40 ing it on the east and west of Crete, is to allow for a current of from one to  $1\frac{1}{2}$  miles an hour in the direction of the wind, when it amounts to a fresh or even a moderate breeze; when there are such currents in the offing and open channels, there will of course be inshore eddies likewise.

Therefore, in navigating these narrow seas at night, some consideration of these local influences must be allowed as a precaution, particularly where neighbouring channels and bays may easily be mistaken for each other by a stranger approaching them, even with the best charts; more especially whilst there are so few lights to guide him from doubt and danger, and such sources of error as may exist in a total dependence upon direct courses and distances, where the currents are uncertain, and where clouds obscure the bolder landmarks and mountains indicated upon the charts of this stormy archipelago. 5

**TIDES.**—The level of the water in the Ægean sea is, as in most parts of the Mediterranean, more influenced by wind than by tide; but in those places in which the rise and fall of the latter is appreciable, it is regular, especially at springs. 10

The effect of tide at Euripo bridge, at which place the spring tide rises about 2 feet, is very pronounced. Here, the stream runs to the northward at half ebb, and to the southward at half flood, attaining a velocity of 6 or 7 knots an hour. At neaps, the stream is irregular and its strength only from half to one knot an hour, and at times but little movement is experienced. See page 165. 15

At the entrance of Talanta channel in the vicinity of the Likhades islets, the tides correspond with those of Euripo, but are less in strength, the flood running in at from  $1\frac{1}{4}$  to 2 knots an hour, and ebb setting out and to the northward at the same rate; there is a sensible rise and fall here affected at times by the wind (see page 233). At Volo, the rise and fall at full and change of the moon, is about 8 inches. 20 25

At Smyrna, the water level rises with a southerly wind and falls with a northerly. The variation in the level is from 3 to  $3\frac{1}{2}$  feet, but at Khios, and places adjacent, it is only about 2 feet. See page 424.

On the coast of Crete, in fine weather, at about the full and change of the moon, the rise and fall is from 6 to 8 inches. 30

**Variation of the compass.**—The general direction of the lines of equal westerly variation in the Ægean sea, between the meridians of  $22^{\circ}$  and  $29^{\circ}$  East, is nearly North and South true, ranging in amount at the present time (1918) from  $4^{\circ}$  in the western part to  $2\frac{1}{2}^{\circ}$  in the eastern. The annual decrease is about  $9'$ . 35

**Communication.**—The numerous lines of steamers render sea communication easy and frequent over the whole extent of the coasts and islands embraced in this volume; among the number are the Pappayani, Cunard, Moss, and Leyland companies from Liverpool; Florio Rubattino, Messageries Maritime de France, Fraissinet, Egyptian, and Russian mail companies, besides the rapidly-increasing Greek shipping. Other small steamers supply means of transit between the minor ports. 40

*General charts 2836a, b.*

**Ports.**—The principal ports of call are the Piræus, Volo, Saloniki, Dédé Agatch, Smyrna, Syra, Rhodes, and Suda.

**Telegraph.**—There is telegraphic communication with all parts of the world, from the ports of the Ægean sea of any importance.

5 Three telegraph cables are laid from Syra to the Piræus; the following islands are connected together, namely:—

Tinos, Syra, Paros, Naxos, Amorgos, Nio, Sikinos, Polykandro, Santorin, Anaphi, Milo, Siphano, Serpho, Thermiá, and Zea.

10 Khios is connected with Syra, and thence with Athens, also with Smyrna.

A cable is laid from Zea island to Ergasteria bay. Thermia is also connected with Piræus and Syra.

Andros, Tinos, Mykoni, and Rhenea, with Syra and Eubœa.

15 Skyros, Skopelos, and Skiathos are also connected with the land lines of Eubœa.

Ægina is connected with Piræus.

Samos, with the land line at Skala Nuova to Ephesus and Smyrna. Mityleni is also connected with the land line at Aivali.

Thaso is connected with Kavala.

20 Tenedos with Khios, Lemnos, and Saloniki; also with the main line to Constantinople by a cable through the Dardanelles. A cable is also laid to Bashika bay.

Crete is connected with Syra by a cable laid from Megalo Kastron.

25 Cables are also laid from Khania to Zante, Rhithymno, and Megalo Kastron, from Megalo Kastron to Sitia, from Sitia to Rhodes, and from Sitia bay to Alexandria. A cable is also laid from Rhodes to Marmarice. Thus, communication may be had with the principal places in the Ægean sea and the rest of the civilised world.

30 For further information on this subject, *see* the descriptions of the places given in the body of this book.

**Standard time.**—The time used throughout Greece, Bulgaria, and Turkey is that of the meridian of 30° E., or 2h. 00m. 00s. fast of Greenwich.

35 **Coal.**—English coal at reasonable prices may generally be obtained at any of the following ports: Suda bay, Megalo Kastron, Piræus, Saloniki, Dédé Agatch, Smyrna, Khios island, Syra, and Volo. Details are given in the descriptions of the ports named.

**Wireless telegraph stations** are only shown on general ocean and telegraph charts.

40 **Life-saving.**—Lifeboats and life-saving stations are only inserted on plans of harbours and anchorages.

*General charts 2836a, b, 3778.*

**PASSAGES.**—Vessels bound from the Mediterranean to the Dardanelles, Athens, Saloniki, Smyrna, or any port in the archipelago, should make Cape Matapan, and pass through the Elaphonisos channel, taking care to guard against the current there, which generally sets to the westward at the rate of one mile per hour. After rounding Cape Malea, if bound to Athens, the course is westward of Parapóla islet for Cape Zurva, the east extreme of Hydra island, after passing which, steer midway between Cape Skyllaion and the western extreme of Agios Georgio island, towards Athens. 5

When passing Parapóla islet in thick weather, caution is necessary as the currents are often strong and the direction is uncertain. 10

If bound for the Dardanelles, the route after passing Parapóla is through the Zea and Doro channels, for Tenedos island.

If bound to Saloniki after passing through the Doro channel, vessels may pass either round eastward of Skyros, and the small islets of Piperi and Psathura for Kassandra point, or west of Skyros and through the channel between Skopelos and Skiathos. 15

If bound to Smyrna, the same route may be followed as that directed for the Dardanelles as far as the Doro channel thence passing northward of the Kaloyeri rocks, and either rounding well to the northward of Psara island on account of the current (*see* page 394) or passing between it and Cape Agios Nikolo, the north-west point of Khios island and proceeding northward of the peninsula of Kara burnu into the Gulf of Smyrna. 20

Another route to Smyrna may be followed after passing through the Elaphonisos channel, by shaping a course to pass through the Siphano channel, guarding against the strong and uncertain currents when near Phalconera islet, and giving Cape Phillippo, the northern extreme of Siphano island, a wide berth in order to avoid the rock off it (*see* page 178), and also to allow for the south-westerly current which in light northerly winds sets towards it. After passing through Siphano channel, steer for Mykoni channel, passing between Aspro islet off Syra island, and Nata islet; thence through Mykoni channel, which is  $4\frac{1}{2}$  miles in width, and the south-westerly current not so strong as in the Doro. When through the Mykoni channel, steer to pass south of Khios island, through Khios strait, and into the Gulf of Smyrna. 25 30 35

*General charts 2836a, b.*

## CHAPTER II.

## ISLAND OF CRETE OR CANDIA.

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VARIATION decreasing about  $8\frac{3}{4}'$  annually.

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*Charts 2536a and b, Western and eastern parts of Candia or Crete.*

*Var.  $2^{\circ} 50'$  to  $3^{\circ} 40'$  W.*

**CRETE, CANDIA, or KIRIT**, as it is variously named, is from its position, fertility, and population, the most important of all the islands of the Levant, and is a portion of the Kingdom of Greece.

Crete is 140 miles in length, with a maximum breadth of 30 miles, and a minimum of about 6 miles. An irregular but continuous mountain chain extends east and west, from one extremity of the island to the other. The western portion forms the lofty ridge named Madara, or the White mountains, which attain an elevation of 8,100 feet. Mount Psiloriti or Ida (*Lat.  $35^{\circ} 13'$  N., Long.  $24^{\circ} 47'$  E.*), situated near the centre of the island, terminates in three lofty peaks, of which the highest is 8,060 feet above the sea.

The rivers are very numerous, but the majority are mere mountain torrents, dry in summer; even the largest become straggling streams and stagnant pools at that season, and should be carefully avoided, as they are centres of malaria.

At the census of 1913 the total population was 336,150, of which two-thirds were Greeks.

The population of the island is for the most part employed in agricultural pursuits, in wine making, in the manufacture of olive oil, soap, dyeing operations, and, to a small extent, in carpet weaving.

The rural population is mainly Christian, but in some districts there is a large intermixture of Mohammedans, chiefly in the more fertile parts of the low districts and valleys near the principal towns. These Mohammedans are, for the most part, native Cretans, and their dress is so similar to that worn by the Christians as to render it difficult for a stranger, although he may be a Greek from the neighbouring islands, to distinguish Mohammedan from Christian. The Cretans are very hospitable to strangers, and, as a rule, exceedingly bright-witted, intelligent, and industrious; clever as artisans, brave, and honest. Greek is the common language of both Christians and Mohammedans, the higher class of Mohammedans speaking Turkish also.

*General chart 2836a.*

*Charts 2536a and b, Western and eastern parts of Candia or Crete.*

*Var. 2° 50' to 3° 40' W.*

**Climate.**—Crete from its position, being intermediate between the hot and arid air of Africa, and the more humid atmosphere of south-eastern Europe, is favoured with a more genial climate than either. Its summer temperature averages about 80° Fahr. between the months of May and November, in the low districts near the shore, and the winters are so tempered by the surrounding sea, and its proximity to Africa, that the thermometer seldom stands below 45° at the coast towns. A milder temperature exists within the upland plains and secluded vales on the flanks of the lofty mountains than in the open country and low lands bordering the coast, depending in intensity upon their zone of elevation and the aspect to which they are exposed.

Snow is present during winter at all summits above 6,500 feet, but it all disappears by the end of July. The climate is one of the healthiest in the Ægean sea, and very similar to that of northern Sicily. Even the summer heat, though often great, is not unhealthy. This generally prevails from the middle of June to the middle of September. At other times, extremes of heat and cold are rare, and never of long duration. The average annual rainfall is 25 inches. *See Meteorological table (page 500) for result of observations extending over several years at Megalo Kastron (Lat. 35° 20' N., Long. 25° 09' E.).*

The best season for travelling in Crete is from the beginning of April to the middle of June. September and October are delightful months when fine, but heavy rains are common at that season, often rendering the rivers impassable.

**Tides.**—On the coast of Crete in fine weather, at about full and change of the moon, the rise and fall of the tide is from 6 to 8 inches.

**Products.**—The fruits of middle and southern Europe may be grown in some of the upland regions, as may also some of the north African produce and fruits upon the lowlands, for the orange, grape, and olive flourish better in the north and internal parts of the island than in any other part of Greece or Asia Minor. Apples, pears, and potatoes are the produce of some of the upland districts and plains, whilst wheat of a remarkably white and good quality is grown in the low valleys on the south coast. The land is stocked with game, and the sea with fine fish; but the chief wealth of the country at present lies in its olive crops. Former revolutions and disturbances, arising from various causes in connection with political and religious animosities, tended to create a feeling of insecurity, so that notwithstanding its genial clime and fruitful soil, its prosperity and population have but slowly advanced.

Red-legged partridges, woodcock, and hares, are found in all parts of Crete, and afford excellent sport to those who take the precaution to bring good dogs with them, for there are none in the island. There

*General chart 2836a.*

*Charts 2536a and b, Western and eastern parts of Candia or Crete.*

*Var. 2° 50' to 3° 40' W.*

are also in some parts a few quail, mallard, teal, wood pigeon, and a species of thrush, but no large game, except a small number of wild goats occasionally met with in the mountains; the Cretans say that their island is free from wolves, foxes, jackals, and all noxious and venomous animals. Snakes, however, exist, but are said to be harmless.

**Trade.**—The principal exports are olive oil, raisins, carobs, cedrates, soap, wine, and goat skins. The imports are flour, butter, cotton and woollen goods, leather, &c. In 1911 the total value of exports was £624,349 and of imports £853,239.

**COMMUNICATION.—Steamers.**—The principal ports of the island are in weekly communication with Turkey, Egypt, Greece, and other parts of Europe, by the following steamship companies, namely: The Messageries Maritimes, Florio-Rubattino, Russian, Goudi, Compagnie de l'Orient, and Pantaleon. There are also fortnightly steamers in normal times, one running to and from Alexandria, and another touching here on the way to the coast of Barbary and back. The most direct communication with Europe is viâ Brindisi, Trieste, and the Piræus.

**Telegraph.**—The chief towns are connected with each other by telegraph lines, and with the outer world by the Eastern Telegraph Company's cables. *See* page 18.

**QUARANTINE REGULATIONS.**—Health offices are at Khania (*Lat. 35° 31' N., Long. 24° 02' E.*), Rhithymno, Megalo Kastron, and Port Nikolo (Agios Nikolaos).

Sanitary stations on the north coast are at Kisamo Kasteli, Kalivia, Khersonisos, and Sitia; on the south coast at Sphakia, Agia Galines, Matala, and Hierápetra.

Sanitary guardhouses on the north coast are at Kolimpari near Gonia, Phodele, and Moklo; on the south coast at Suia (Sugias), Thomaia (Pakhias Ammon), Lutro, Plaka, Kalo Limniones, and Makri Yalo.

At the harbours of Khania, Suda, Rhithymno, and Megalo Kastron, freedom of entry is granted at any hour of day or night, not only to vessels subject to no sanitary treatment, but also to vessels which are subject to general or individual medical inspection.

The jurisdiction of the office of health in Khania extends also over the harbour of Suda, in which a sanitary chief guardian is continuously resident.

Quarantine quarters are temporarily situated on the inner islet of Suda; to them shall be admitted, besides vessels subject to no sanitary treatment, also vessels subject to disinfection, killing of rats, medical

*General chart 2836a.*

*Charts 2536a and b, Western and eastern parts of Candia or Crete.*  
*Var. 2° 50' to 3° 40' W.*

inspection, individual or general, coming from ports of origin free of disease, disinfected, suspicious, and undisinfected.

Health certificates are divided into four classes, viz., free, disinfected, suspicious, and undisinfected. Free, are those which start from places free from disease; disinfected, suspicious, and undisinfected, are those proceeding from places without sanitary precautions; and infected are under Art. 3 of the Sanitary law.

No vessel is allowed to anchor at any harbour where there is no Sanitary officer; if obliged to anchor from necessity, no communication is allowed with the shore.

Only vessels free from infection can anchor in the harbours where Sanitary stations and guardhouses are established. In these harbours, on the entrance of a vessel bearing a free-of-infection certificate, the governor of station or superintendent of guardhouse proceeds to the examination of the certificate of health, and to a cross-examination of the captain and two others, and, if considered necessary, to the examination of the day-book and register of the crew. After this, if not the slightest suspicion remains, liberty of free communication is granted. The cross-examination is usually conducted in the Sanitary establishment.

If the Sanitary officer is not satisfied with the result of the examination, a report is made to a higher authority, asking for instructions; meanwhile, pending instructions, no communication is allowed with the shore. Such vessels must in every case, but especially when some suspicious disease was observed on board, be sent forward to the nearest Health office, or, if the disease on board creates suspicion of being a pestilential disease, to the quarantine quarters.

Foreign infected vessels must without delay be sent out of Greek waters.

In the case of vessels leaving the harbours where Sanitary stations or guardhouses are established, the officer in charge of these stations or guardhouses should "visa" the health certificates of such vessels.

**The standard time** adopted in Crete is that of Greece, or 2h. 00m. 00 seconds fast of Greenwich mean time. The time is given at the English post office at Khania (*Lat. 35° 31' N., Long. 24° 02' E.*) by the Eastern Telegraph Company's cable.

*Chart 2536a, Western part of Candia or Crete. Var. 3° 40' W.*

**Antikithera channel.**—See page 92.

**PONDIKO-NISI.**—The outlying islet of Pondiko-nisi or Rat islet, and its little rock, close off its south-western extreme, are about 6½ miles, 247° true, from Cape Busa. The islet is half a mile long, 730 feet high, steep-to, and has no anchorage; it is the ancient *Mylæ*.

*General chart 2836a.*



*Plan of Grabusa on 217. Var. 3° 40' W.*

**CAPE BUSA** (Lat. 35° 37' N., Long. 23° 35' E.), the north-west extremity of Crete, is a high and precipitous promontory stretching northward towards the island of Antikithera. It is 7 miles in length by about one mile in average breadth, its highest part, the ancient Mount Korykos, reaching 2,560 feet above the level of the sea; two other summits attain respectively 2,430 feet and 807 feet.

**Agria Grabusa** is a bold and barren island lying northward of Cape Busa and forming the south side of the Antikithera channel. (See page 92.) The island is  $1\frac{2}{10}$  miles long in a north-west and south-east direction, by a quarter of a mile in average width. The passage between Agria Grabusa, and Cape Busa, is 4 cables wide, but the navigable channel is reduced to less than half this breadth, by a reef extending  $1\frac{3}{4}$  cables from the south-east end of Agria Grabusa, and a 3-fathoms bank extending nearly three-quarters of a cable from Cape Busa.

**Grabusa islet**, about 7 cables in diameter, and 450 feet high, is precipitous, and surmounted by a fortress built by the Venetians, when Crete was in possession of Venice, to prevent its becoming the stronghold of pirates at the threshold of the Cretan seas. The islet is situated one mile south-westward of Cape Busa, with deep water between; the fortress renders the islet very conspicuous from the westward.

Grabusa attained some celebrity in the war of Greek independence (1823), in which the Cretan Greeks took a long and energetic part against the Turks; the islet was taken from the Turks by a surprise over its garrison of three, who then held charge of the stronghold. It was subsequently retained by Greek and Cretan pirates, until 1828, when it was destroyed by a combined English and French squadron. It was during this last attack, on the 31st of January, 1828, that H.M.S. *Cambrian*, by an accident in missing stays, was wrecked upon the reef south of the islet.

**Grabusa harbour** is formed between a small peninsula called Tigani (Frying pan), lying southward of Grabusa, and a long ledge of rocks partly awash, extending southwards from the south-western end of Grabusa like an artificial mole, but with a passage 3 cables wide and from 5 to 10 fathoms deep between its extremity and the rocks extending from Tigani peninsula. A 2-fathoms bank, with a black rock on its outer part, extends about 3 cables from the shore on the eastern side of the harbour, at  $1\frac{3}{4}$  miles southward of Cape Busa; the channel between this bank and the reefs off the eastern point of Grabusa islet is 3 cables wide, with depths over 5 fathoms. The bottom of the harbour is composed of a thin layer of sand over rock, and therefore affords no secure hold nor safe shelter during violent gales from the westward; it is therefore not recommended as an anchorage in south-westerly

*General charts 2536a, 1685, 2836a.*

*Plan of Grabusa on 217. Var. 3° 40' W.*

gales. The best shelter is with the eastern point of Grabusa islet in line with the centre of Agria Grabusa, and between the former and the black rock, previously mentioned, lying 2 cables from the eastern side of the harbour.

**Directions.**—The safest channel into Grabusa harbour, is the northern, taking care, however, to give the eastern point of the islet a berth of 2 cables, to clear the reef extending from it to the eastward and southward. In a northerly gale during winter, it might be more convenient for a vessel caught near this entrance of the archipelago to run for this harbour, so as to be ready to take advantage of any change of wind or weather, in preference to lying-to, and being drifted to leeward of Crete.

*Charts 2536a, b, Western and eastern parts of Candia.*

**North coast.**—The north coast of Crete is indented by deep bays at its western and eastern ends and contains all the principal ports and harbours in the island; there are few outlying dangers, and, generally speaking, the 100-fathoms line is about 4 miles from the coast except near the projecting capes, when it seldom exceeds  $1\frac{1}{2}$  miles from the shore.

*Chart 2536a, Western part of Candia or Crete.*

**KISAMO BAY.**—The entrance to Kisamo bay is formed between Agria Grabusa and Cape Spada, which bears from the north-west end of the former,  $70^\circ$  true, distant  $8\frac{1}{2}$  miles. The bay from the line joining these two extremes runs in  $10\frac{1}{2}$  miles, and at its head is a narrow marshy plain with a sandy shore, behind which rise gentle ridges, well cultivated with corn, vines, and olives, and containing several villages.

A dilapidated Venetian fortress stands at the head of the bay, upon the site of the ancient town of Kisamo (*Lat.  $35^\circ 29' N.$ , Long.  $23^\circ 39' E.$* ), and just over an old sea cliff; adjacent is a poor village and bazaar. The ancient mole which formed the old port of Kisamo is now visible to a height of nearly 20 feet above the sea, owing to a subsequent elevation of the coast; the harbour is consequently almost dry and choked with sand. A ledge of low sea-washed rocks, two-thirds of a mile north-west of it, juts out to a point called Kavo nisi, and divides the head of the bay of Kisamo from the valley and bay of Mesoghia. The water shoals nearly half a mile northward of Kavo nisi.

There is a sanitary station at Kisamo Kasteli; *see* Quarantine regulations, page 22.

**Directions.**—Being quite open to the northward, the bays of Kisamo and Mesoghia are not recommended as anchorages for sailing vessels, the bottom being generally sandy and the holding ground bad. Should a vessel, however, be unfortunately embayed and hampered between the promontories of Cape Busa and Spada during a gale from the

*General charts 2536a, 1685, 2836a.*

*Chart 2536a, Western part of Candia or Crete. Var.  $3^{\circ} 40'$  W.*

northward, she should run towards the south-eastern angle of the bay and anchor in not less than 17 fathoms water, off Tranisa point, on the eastern shore, where the bottom is muddy and more tenacious than  
 5 elsewhere. A well-found vessel, with the usual precautions of sufficient cable out, would here ride out an ordinary gale with safety.

*Plan of Grabusa on 217.*

**Agios Sostis bay.**—Native coasting craft find shelter in a small indentation of the shore on the western side of Kisamo bay, about  
 10  $2\frac{1}{2}$  miles southward of Cape Busa, called Agios Sostis, from a chapel existing there dedicated to this Greek saint; the water is, however, too deep for anchoring off it, and to obtain shelter, it is necessary to have the stern secured to the northern shore.

**Water** may be obtained at the mouths of all the valleys, and a  
 15 small supply of provisions from the adjacent villages.

*Chart 2536a, Western part of Candia or Crete.*

**CAPE SPADA** (ancient *Psakum* prom.) (*Lat.  $35^{\circ} 41'$  N., Long.  $23^{\circ} 44'$  E.*), the most northerly extreme of Crete, is easily recognised by a small conical hillock like a tumulus, which stands over  
 20 its high and bluff extremity, the summit of which is 1,200 feet above the sea.

This remarkable promontory, projecting northward 11 miles beyond the usual line of the coast, has an average breadth of 3 miles. The land is generally about 1,800 feet high, but the ancient *Tityrus* mountain  
 25 rises near the centre of the promontory to a height of 2,500 feet above the sea. The shape of this tongue of land is not unlike the blade of a sword; hence probably the name Cape Spada.

**Cove.**—On the eastern side of Cape Spada, is a cove at the mouth of a rocky glen, called *Kantzilières*, where coasting craft sometimes get  
 30 shelter by securing under its northern cliff. The ruins of the ancient town of *Dictamnium* lie at the mouth of the gorge or glen, and it was celebrated for its temple to the heathen goddess Britomart, under the name of Dictynna.

**KHANIA BAY** is formed between the peninsula of Cape Spada  
 35 and the bold and broad peninsula of Akrotíri, the northern termination of which is Cape Tripiti, bearing  $105^{\circ}$  true, distant  $20\frac{1}{2}$  miles from Cape Spada. The bay recedes from this line,  $6\frac{1}{2}$  miles on the eastern, and  $8\frac{1}{2}$  miles on the western side, and the town of Khania, on the low shore near its south-east angle, may be distinguished at a distance of 9 or  
 40 10 miles.

To the southward of the town of Khania, rise the lofty mountains of the Madara, the ancient *Leuce* or White mountains, so called no doubt from their bare, bold, whitish summits, or from retaining snow on some

*General charts 2536a, 2836a.*

*Chart 2536a, Western part of Candia or Crete. Var. 3° 30' W.*

of their peaks during a great part of the year. The Madara are a broad mass of naked crests showing a serrated outline, without any remarkable feature or peak as a defined summit. *See page 56.*

The Malaxa and Therison ridges are spurs extending from the Madara to the northward, and at the base of these spurs lies the bay of Suda, with the fertile plain of Khania extending westward from it, luxuriant with fine olive groves, and studded with thriving villages. The Madara mountains are visible from the south coast of Greece; Agio Pnevma, 7,650 feet high, although not the highest, is one of the most eastern and easily recognised peaks, from its somewhat conical form.

**Theodoro islet** (*Lat. 35° 32' N., Long. 23° 56' E.*).—

**Anchorage.**—Theodoro is a barren islet, 540 feet high, lying 4 miles westward of Khania, and half a mile from the shore. The shelter it affords, where the holding ground is good, is very limited, but it only requires confidence in the management of the vessel to ensure taking a berth close to the north-eastern point of the islet, and thus to anchor where shelter will best be obtained. To do this, the starboard anchor should be let go in 9 or 10 fathoms water, at about half a cable off the north-eastern extreme of the islet, when bearing about 16° true, and the other anchor about W.S.W. of it, about the same or even a less distance from the shore, in 5 or 6 fathoms, when the point bears about 52° true. A chain may also be taken to the rocks if practicable.

The bottom here is a stiff muddy sand, and good holding ground, and the shore is so bold as to have 4 fathoms close alongside it. The ground off the southern portion of the islet is loose sand; the channel between the islet and Crete is shallow, and obstructed by rocky patches. The only safe anchorage is consequently that close under the north-eastern extreme of the islet, both in respect to depth of water and nature of bottom.

The Venetians had a fortress on Theodoro, to protect their larger trading ships whilst waiting their cargoes from Khania, and other ports. They used to anchor here in safety, with shore-fasts to the islet as recommended.

*Plan of Khania on chart 1658.*

**KHANIA HARBOUR** is formed partly by a ledge of rocks, lying parallel with the coast, and partly by an ancient mole, built upon and extending from them, and upon which is raised a high sea-wall or parapet, with a fort in its centre. This mole extends from the north-eastern bastion of the town wall, thence towards the north-western bastion, leaving a channel half a cable wide, and 32 feet deep, between the latter and a lighthouse at the extremity of the mole; but inside, the depths quickly shoal to the shore.

Within, the harbour is in the form of a double bay; the southern one lies directly opposite the entrance, where the water is deepest, but

*General charts 2536a, 2836a.*

*Plan of Khania on chart 1658. Var.  $3^{\circ} 30' W$ .*

much exposed with northerly gales to an inconvenient and dangerous swell; only vessels under 10 feet draught can be sheltered behind the mole. Around the southern bay is the marina, on which the Custom  
5 house and principal merchants' storehouses are situated; vessels with cargo consequently anchor here for convenience of trade, and the greater depth of water. The eastern bay is long and narrow, and contained the arsenal of the Venetians; 13 of the original galley arches still remain and are now used as warehouses, but the water in this part  
10 of the port is now so shallow, that only vessels in ballast or of light draught and coasting craft can use it. *See view of Khania on chart 2536a.*

There is a Health office at Khania, and a sanitary guardhouse at Kolimpari near Gonia, at the south-west corner of Khania bay; *see*  
15 Quarantine regulations, page 22.



Khania, bearing  $209^{\circ}$  true, 4 miles.

**Caution.**—It is impracticable to enter this harbour with a strong northerly breeze, and it is never prudent for a stranger unless piloted by the Captain of the Port, who attends outside to conduct vessels to their berths, when it is safe to do so.

20 **LIGHT** (*Lat.  $35^{\circ} 31' N$ , Long.  $24^{\circ} 01' E$* ).—A light is shown, at an elevation of 79 feet, from a white tower, 75 feet high, erected on the molehead, on the eastern side of the entrance to the harbour.

*Charts 1658, 2536a.*

**Anchorage.**—Steamers and even sailing vessels may often find it  
25 more convenient to communicate with the officials at Khania, from the roadstead, than by proceeding to Suda, especially in the summer, or with any south-westerly wind. The best holding ground is in depths over 20 fathoms; sailing ships should therefore not anchor in less than this depth. Steam vessels anchoring nearer the harbour  
30 should avoid a rocky patch of 17 to 18 fathoms,  $1\frac{1}{2}$  cables in diameter, the centre of which bears  $350^{\circ}$  true, distant 6 cables from the light-house. It is not safe for a sailing vessel to remain with a rapidly rising barometer, during or immediately after a S.W. gale, or with a threatening gale from the northward; under these circumstances, the  
35 shelter of Suda bay should be obtained.

To avoid injuring the telegraph cables laid on the east side of Khania bay, anchorage is prohibited with the north-east angle of the bastions bearing westward of  $185^{\circ}$  true.

*General charts 1658, 2536a, 2836a.*

*charts 1658, 2536a. Var. 3° 30' W.*

In case a vessel should have remained too long, or be caught after leaving the port, and cannot then re-enter or beat out of the bay against the head swell, she should then run for Theodoro islet, and endeavour to bring up close under its north-eastern extreme. See page 27. 5

*Plan of Khania on 1658.*

**Khania** (Canea) (Lat. 35° 31' N., Long. 24° 02' E.), the ancient *Kydonia*, the capital of Crete, is regularly built, but with narrow streets; a rampart runs round the town, but is in rather a dilapidated condition. The European Consuls also reside here, in consequence of its proximity to the fine bay of Suda, and from its having a small port convenient for vessels of light draught. It is the principal trading place in the island, and its population at the census of 1913 was 24,399. 10 15

Besides eleven mosques, there are two Greek churches, two Jewish synagogues, and a Roman Catholic church. Each faith is well provided with schools, to the maintenance of which the local government contributes liberally. Of the three Greek schools in Khania, one is a primary school, another a girls' school, and, finally, an upper school or lycée. The Mohammedans have a primary school, and three lycées, also an excellent girls' school. 20

The town has far outgrown its walled area; the suburbs to the westward are called Neachora and to the east Kalepa or Halepa; part of the south wall has been taken down. 25

The water supply of Khania is obtained from a spring at Butzunnaria, about 5 miles distant, from which it is brought by pipes.

The country around Khania is not only fertile, but exceedingly well cultivated. The only product exported to Europe is oil, of two qualities, chiefly shipped to France and Austria. Part is used locally for making soap, of which there are many factories in Khania and Megalo Kastron or Candia. 30

**Communication.**—Khania is in telegraphic communication with the principal towns of the island; also with Rhodes, Alexandria, and Syria. A cable is also laid to Zante, and thus messages may be sent to all parts of the world. 35

The telegraph office is open until midnight; it is on the west side of the port, about a cable southward of the lighthouse.

The Messageries Maritimes steamers from Marseilles call monthly; the Florio-Rubattino Company's steamers call weekly from Genoa, and bi-weekly from Syracuse and Malta. 40

**The British Consul** for the island has his official residence at Khania. The European Consuls reside at Kalepa, about three-quarters of a mile to the eastward of Khania.

**Trade.**—Oil, soap, wine, and oranges are largely exported to all the Levantine ports, especially Egypt. Almonds, cheese, and carobs 45

*General charts 1658, 2536a, 2836a.*

*Plan of Khania on chart 1658. Var. 3° 30' W.*

or locust beans are also exported, though in smaller quantities. To these may be added in winter the export of Cretan snails. Lace and coloured woollen and cotton goods are largely produced throughout the island, but not exported. Many potteries exist, but the wares are for home use only. Among eatables, the delicious cream cheese ("Cheese of flowers," as the Greeks call it) deserves notice, and among textile fabrics the pretty-patterned, many-coloured cotton yorghans—a speciality of the Sphakia mountains.

10 **Shipping.**—During 1911, 597 steam vessels, of 486,761 tons, and 37 sailing vessels, of 4,515 tons, entered, and the same number cleared, in the foreign trade of the port of Khania. In the port of Suda bay 85 steam vessels, of 91,457 tons, entered, and the same number cleared, four, of 3,486 tons, being British; eight sailing vessels, of 1,503 tons, 15 also entered and cleared, one, of 100 tons, being British.

There are three tugs at Khania (*Lat. 35° 31' N., Long. 24° 02' E.*).

**Telegraph cables.**—Three cables are landed near the ruins of an old convent, close east of the fortifications. One cable is laid to Zante, a second to Rhithymno, and the other to Megalo Kastron. 20 They leave the shore in a north-easterly direction. *See Anchorage* on page 28.

**Hospitals.**—Khania has civil, military, and naval hospitals, as well as an asylum for the insane. The climate is so healthy that the demands on all four institutions are happily slight. There are also in 25 Khania public baths and clubs.

The asylum for the insane is in the dockyard at Suda bay.

**Water** is abundant and good.

*Chart 2536a, Western part of Candia or Crete.*

**AKROTIRI**, almost an island, about  $6\frac{1}{2}$  miles in diameter, separates Khania bay from that of Suda. This peninsula, the ancient 30 *Kyamon* promontory, is joined to the main by an isthmus only  $1\frac{1}{3}$  miles across. Cape Mavro Muri, its north-western extreme, is low, and from the shore one mile north-east of it, a ledge of rocks and foul ground extends half a mile northward, which must be avoided in rounding the promontory to or from Khania. In strong northerly winds, 35 a wide berth must be especially given to this part of the coast, in consequence of the uncertain set of the currents and heavy swell.

The land beyond Cape Mavro Muri is bold and high; Capes Tripiti and Maleka form bluff headlands, and  $2\frac{1}{2}$  miles south of the latter 40 cape, and a mile from the eastern coast, is the highest peak, a conical summit named Mount Viglia, reaching an elevation of 1,745 feet above the sea. (*See view of the island of Crete, from north-eastward of Cape Maleka on chart 2536a.*) With the exception of the foul ground north of Cape Mavro Muri, the peninsula is steep to on all sides, and has 45 an elevated plateau in its centre, round which are several villages.

Mount Viglia is called Sylopa by the Greeks.

*General charts 1658, 2536a, 2836a.*

*Chart 1658, Suda bay and Khania. Var. 5° 30' W.*

**Manati islet, or Paleo Suda** (*Lat. 35° 30' N., Long. 24° 11' E.*).—From Cape Maleka, the eastern bold coast of Akrotiri trends south-south-eastward  $3\frac{1}{2}$  miles and then south-south-westward  $2\frac{1}{2}$  miles to Manati islet, which is less than 2 cables from the coast, with a narrow 5 3-fathoms channel between. There is anchorage south-west of Manati islet, in from 12 to 17 fathoms water, on a bottom of muddy sand, convenient for waiting until daylight, or remaining even during a gale, if no supplies are required or communication desired with Khania. It is invariably found that the wind lessens in force as the 10 entrance to Suda bay is neared. The mass of mountains forming the Madara or White mountains, lying so immediately over the bay, acts apparently as an obstruction to the wind, and prevents its full force fetching home upon the coast beneath it.

**SUDA BAY**, the entrance points to which may be said to be 15 Manati islet and Cape Drepano, is one of the safest and most capacious ports in the Levant. It is most conveniently situated for vessels just entering the archipelago, and seeking shelter from a rising northerly gale in the winter, at which time it is most frequented by wind-bound vessels of all nations. 20

**Suda islet.**—The islet of Suda, on which is a fort now a complete ruin, is  $1\frac{1}{4}$  miles west-south-westward from Manati islet, and separated from the coast of the promontory by a channel  $2\frac{1}{4}$  cables in width, but which is further contracted by a reef nearly a cable in diameter, with a rock above water on it, nearly in the middle of the fairway. 25 The islet is nearly 4 cables in length north-east and south-west, and together with the detached portion on the north-west side, 3 cables in width; it is surrounded by white cliffs, but they are not seen until a vessel is within a mile or two of the entrance. The two portions of the islet are separated by a narrow channel with a depth of only 30 3 feet.

To pass between Suda islet and the reef, a small vessel should keep the conspicuous red mound at the head of the bay in line with a peaked hill at the back of it, bearing 272° true; passing midway 35 between the reef, which shows, and the north end of the islet; H.M.S. *Fearless* passed through on this mark in 1892, with not less than  $7\frac{1}{2}$  fathoms.

**LIGHT.**—A light is shown, at an elevation of 82 feet, from a frame on the south part of the fort on Suda islet.

**CAPE DREPANO** is a bold point of land, with a high and 40 flat table summit, and a rocky tongue like a reaphook forming its extremity, from whence its name is derived. The table hill, 1,830 feet high, over Cape Drepano, is a good landmark for distinguishing the entrance to Suda bay, whilst the northern side is distinguished by the sharp conical peak of Mount Viglia or Sylopa. 45

*General charts 2536a, 2836a.*



*Chart 1658, Suda bay and Khania. Var. 3° 30' W.*

**LIGHT.**—A light is shown, at an elevation of 197 feet, from a white tower situated 328 yards within the extremity of Cape Drepano.

**Kalivia bay.**—The south shore of Suda bay trends in a south-westerly direction  $2\frac{1}{2}$  miles from Cape Drepano, and then west-north-westerly about the same distance to Suda point. The western portion of this bight is called Kalivia bay, from the shore of which a shallow bank extends from 2 to 3 cables.

There is a sanitary station at Kalivia; see Quarantine regulations, page 22.

**Suda point** (*Lat. 35° 28' N., Long. 24° 10' E.*) surmounted by Paleokastron, the ancient *Aptera*, is situated  $8\frac{1}{2}$  cables southward from Suda islet. An ancient mole with 6 to 10 feet of water over it, extends  $1\frac{1}{4}$  cables northward from Suda point. From Suda point, the south shore of the bay trends westward  $1\frac{1}{2}$  miles, and then west-north-west nearly 2 miles, to the dockyard. A depth of 10 fathoms will be found at a cable from this shore.

North-westward, half a mile from Suda islet, on the Akrotiri coast, is a small natural port (the ancient *Minoa*), now only accessible to boats, as a ridge of shingle bars its entrance.

*Plan 3691, Suda bay anchorage.*

From Suda islet, the north shore of the bay extends west-north-west  $4\frac{1}{2}$  miles to the head. The north, like the south shore, is fairly steep to for  $2\frac{2}{3}$  miles, or half a mile westward of Spartea cove, whence a line to the western side of the dockyard marks approximately the 10-fathoms line. After passing westward of Suda islet and point, the water deepens to 123 fathoms, and depths too great for anchorage continue until within  $1\frac{1}{2}$  miles of the head of the bay, where there is a depth of 20 fathoms.

Suda bay is enclosed between steep sterile hills, the rich plain of Khania extending beyond it to the westward, with its luxuriant groves of olives. The road to Khania by the plain from Azizieh is about 4 miles in length upon a paved road.

*Chart 1658, Suda bay and Khania.*

**Directions.**—In making for Suda bay from the northward, the peninsula of Akrotiri is remarkable, and the cone-like shape of Mount Viglia cannot be mistaken. Cape Drepano lighthouse is not easily distinguished, but the high flat land at its back shows out well. Manati island is low, and will not be seen until well in; round it at any convenient distance, and then steer with the southern end of Suda islet a little on the starboard bow.

Pass about a third of a mile southward of Suda islet, or midway between it and Suda point, then steer about 285° true for the anchorage abreast the dockyard. As the head of the bay is surrounded by shoal water, and the bottom in places uneven, attention should be given

*General charts 1658, 2536a, 2836a.*

*Chart 1658, Suda bay and Khania. Var. 3° 30' W.*

to the lead, and a large ship should not go into less than 8 fathoms water, nor bring the minaret in the dockyard to bear southward of 183° true.

*Plan 3691, Suda bay anchorage.*

5

**Anchorage.**—The best anchorage in Suda bay is off the dockyard, in from 13 to 16 fathoms, and nearer the southern shore than the northern. On the north side the bottom is very soft mud, which affords but little hold for the anchors. Northerly winds are not dangerous in this bay, but southerly winds blow in gusts and sometimes intercept communication with the shore, more especially from January to March, when southerly gales are frequent. 10

In the winter season a long black cloud, resembling a sausage, appearing over the land southward of Cape Drepano, is a certain sign of a very heavy S.E. gale and high sea, lasting from four to six hours, generally commencing at dark and preceded by a long heavy swell. 15

The dockyard is easily recognised by the high wall surrounding it, and by the sheds, factory, building slip, and minaret. The red mound at the head of the bay is readily made out, and the village of Azizieh by its buildings. The white mosque at the village of Chakalaria, a mile southward of the head of the bay, is also conspicuous. 20

**Winds and weather.**—January, February, and March are the bad weather months; during this season there are frequent gales and much rain. During the summer months, an occasional gale, generally from the westward, may occur, but as a rule the winds in Suda bay are local; light airs from the westward are experienced in the mornings and forenoons, and winds from seaward in the afternoon, falling to a calm a little after sunset. During north-west or northerly winds outside, it will generally be from west or west-north-west in the bay, caused by the valley at its head, and the hills on either side. The south-east and southerly winds, as at Malta, are hot and oppressive, and the bay being enclosed with high land, except at the entrance, the hot winds from off it are felt from every quarter. The weather in summer is generally fine and clear, but the heat is oppressive; and owing to the close proximity of a few marshes, fever and ague, generally in a mild form, prevail at this season. 25 30 35

**Quarantine** (*Lat. 35° 29' N., Long. 24° 06' E.*).—The Health office at Khania has jurisdiction over the harbour of Suda, in which a sanitary chief guardian is continuously resident. Quarantine quarters are temporarily situated on the inner islet of Suda. Freedom of entry is granted at any hour. See Quarantine regulations, page 22. 40

**The dockyard** on the southern side, and about three-quarters of a mile from the head of Suda bay, is a small government establishment containing one building slip for a vessel of about 2,000 tons, several workshops, sawmill, factory for repairing engines, a hand crane to lift 45

*General charts 1658, 2536a, 2836a.*

*Plan 3691, Suda bay anchorage. Var. 3° 30' W.*

8 tons, and large steam hammer, all in ruins (1917) except the crane, which is workable; adjoining the yard are coal depôts for the navy. Within the yard are barracks, an asylum for the insane, a ruined  
5 mosque, and the former residence of the commandant.

**Azizieh** (*Lat. 35° 29' N., Long. 24° 04' E.*). — At nearly three-quarters of a mile westward of the dockyard, is the new village of Azizieh, called after a late Sultan of Turkey. It stands on the site formerly called Tuzla, from its salt pans; the land in its vicinity has  
10 been drained, and the place converted from a plague spot into a neat, well-to-do village with stone houses.

The number of persons in Azizieh does not exceed 1,000.

**Telegraphic communication.** — A land line belonging to the Eastern Telegraph Co., connects Suda with Khania, and thus with  
15 all parts of Crete and the rest of the civilised world; the telegraph office is inside the dockyard.

**Supplies.** — Fresh meat and vegetables may be obtained, and other provisions are plentiful and cheap. The water is too deep, and the small bays not sandy enough for the seine, but a few salmon bass  
20 of a large size may occasionally be caught.

**Coal.** — About 2,500 tons of coal are usually in stock; it is brought off in lighters of from 10 to 20 tons, and one of 50 tons.

Tugs can be obtained from Khania.

*Chart 1658, Suda bay and Khania.*

**Water.** — At the village of Kalivia, in the bay of that name  
25 already alluded to, there are fertile hills and valleys, with copious rivulets of limpid water falling through them from the Apokorona district. One of these streams is deep, and navigable for a short distance, and the water is excellent; but the others are brackish near the sea. The  
30 best summer watering place for a fleet, or for a vessel when not required to go to the head of Suda bay, is from the fountain at the foot of the hill of Paleokastron, about half a mile westward of Suda point. The water is of excellent quality, and the boat being able to get close in to the beach, can be filled at the rate of about 4 tons an hour. There is a  
35 stone pier or jetty about 200 feet in length, a little eastward of the fountain, constructed for landing troops. The ruins of the ancient city of *Aptera* lie over the spring. There is summer anchorage for large vessels in 16 fathoms of water, on the bank south-eastward of Suda islet, and convenient to this watering place, but occasionally there  
40 is a heavy swell from the north-eastward.

A buoy is moored about 80 yards from the end of the stone pier just mentioned, and the 5-fathoms line is 110 yards from the same point. A pole beacon, surmounted by a triangular topmark, is situated on the point about  $1\frac{3}{4}$  cables westward of the fountain, and in line with a

*General charts 1658, 2536a, 2836a.*

*Chart 1658, Suda bay and Khania. Var. 3° 30' W.*

whitewashed boulder on the hillside marks the edge of the 5-fathom bank.

A tank vessel of about 10 or 12 tons is attached to the dockyard, and the water supplied is very good. Steam cutters can water alongside the dockyard jetty on getting permission from the authorities, but must take care not to get aground. At the head of the small river northward of Azizieh, is an excellent spring of water, but during the summer months the bed of the river is dry a little within its mouth.

*Chart 2536a, Western part of Candia or Crete.*

**The coast** from Cape Drepano (*Lat. 35° 28' N., Long. 24° 15' E.*), forming the west side of Armyrò bay, trends nearly south for a distance of 7 miles to the mouth of the Armyro river, at the south-western corner of the bay of the same name. This coast is nearly straight, cliffy, and steep-to.

**Armyro** is a ruined fort, about half a mile within the south-west angle of the bay, where numerous sources of clear but brackish water issue and unite with a fresh-water rivulet flowing out of the gorge or pass in the western mountains, that separates the Apokorona valley from the Armyro plains. Thus united, these waters form a small stream debouching on the shore. On the south side of the mouth of this stream, stands a well-built though small village of white houses, which can be seen from a distance of 10 or 12 miles. Close to its mouth is Nikola islet, 8 feet high, on which stands a very conspicuous white stone house.

The river has at present a bar of rock and sand across its mouth, over which there is not more than 3 feet, but in ancient times it formed a winter harbour for vessels, when, probably, its entrance was deeper, as the adjacent cliffs show a rise of the coast of about 6 feet in historic times; and the same evidence exists in the bays of Suda and Khania, but to a greater extent.

**Coast.**—Armyrò and Rhithymno bays are separated by a long strip of rocky coast, 6 miles in extent. The bottom in them is clean sand, and the depth of water diminishes gradually towards the shore, affording good temporary anchorage. The sandy shore of Rhithymno bay terminates at Capo Maletzi, about  $7\frac{1}{4}$  miles eastward of the town of Rhithymno.

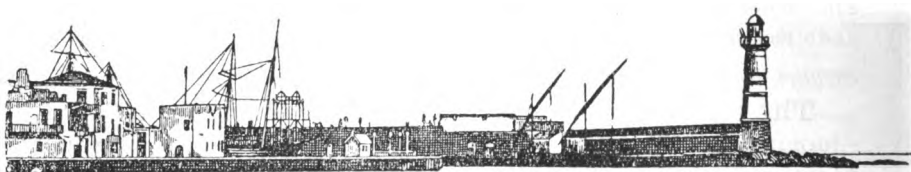
*Plan of Rhithymno on 217.*

**RHITHYMNO (RÉTHIMNON)** (*Lat. 35° 22' N., Long. 24° 29' E.*), the third town in size in Crete, and the capital of the central district of the island, lies 13 miles south-eastward of Cape Drepano, and extends over a rocky projection of the shore; it is surrounded by fortifications, with a citadel at its north end, both being the work of Venetians.

*General charts 2536a, 2836a.*

*Plan of Rhithymno on 217. Var.  $3^{\circ} 20'$  W.*

- A small harbour opens to the south-eastward between two short moles, but at its best it only admits vessels of a draught of  $7\frac{3}{4}$  feet. The entrance of the harbour is badly situated, being in a direction to receive the littoral drift from the sandy shore eastward of it; and thus dredging, which periodically takes place, has no permanent effect in maintaining the depth at the entrance. See view on plan 217.



Rhithymno harbour entrance.

There is a health office at Rhithymno (*Lat.  $35^{\circ} 22' N.$ , Long.  $24^{\circ} 29' E.$* ). See Quarantine regulations, page 22.

- 10 **LIGHT.**—A light, elevated 49 feet, is shown from a white tower 27 yards from the southern extremity of the mole on the north-eastern side of the entrance to the harbour of Rhithymno.



Rhithymno light-house.

- The anchorage** is north-eastward of the town, on a bottom of muddy sand, in about 6 fathoms water, with the northern end of the fort bearing about  $262^{\circ}$  true, distant half a mile; being entirely open to the northward, it is only available for sailing vessels during fine weather in the summer season, or with settled southerly winds. A vessel, however, well found in anchors and cables, and with sufficient cable out, would ride in safety most of the summer gales, although experiencing a considerable swell during its continuance. A berth for a large ship is in 12 fathoms, sand, with the eastern extreme of the fortifications bearing about  $183^{\circ}$  true, and the northern extreme of the fort  $237^{\circ}$  true. The bottom can be seen in 6 or 7 fathoms water.

- Trade.**—The chief exports are oil, soap, wine, silk, locust beans and valonia; the imports are potash, cereals, manufactured goods, hardware, timber, and salt fish. The average yearly value of trade at Rhithymno, export and import, is £200,000; in 1911 the imports from the United Kingdom amounted to £10,000, and the exports to the same to £18,500.

- Shipping.**—In 1911, 442 steam vessels, of 318,603 tons, entered and cleared with cargo; 136 sailing vessels, of 2,646 tons, entered, and the same number cleared, in the foreign trade of the port of Rhithymno; no vessels were British.

**Population.**—The population in 1911 amounted to 9,086 persons.

*General charts 2536a, 2836a.*

*Plan of Rhithymno on 217. Var. 3° 20' W.*

**Communication.**—Steamers run to the other towns in the island, and also to Greece and Alexandria. A land telegraph line connects Rhithymno with the principal towns of the island, and a submarine cable is laid to Megalo Kastron, whence communication may be had with all parts of the world. A cable is also laid to Khania.

**Telegraph cables.**—The above-mentioned cables are landed at a cable-house situated near Gube spring, about two-thirds of a mile westward of the town. The cable to Khania leaves the shore in a north-westerly, and the other in a northerly direction; vessels must avoid anchoring over them.

**Supplies.**—Fresh meat, bread, vegetables and fruit can be obtained in small quantities, but are scarce in winter. Good water is supplied in lighters at 1s. 7d. per ton.

*Chart 2536a, Western part of Candia or Crete.*

**Mount Psiloriti or Ida** (*Lat. 35° 13' N., Long. 24° 47' E.*).—At Cape Maletzi, the spurs of Mount Ida, or Psiloriti of the moderns, extend to the sea, and advance to the northward 3 or 4 miles beyond the general direction of the coast, for a distance of more than 20 miles, forming the rocky Capes Liano Kavò, Khondrò Kavò, Stavros, and Dhia. Mount Psiloriti or Ida, about 8,060 feet above the sea, when seen from the north-westward, has a lofty conical form, but with a broad undulating summit from the northward, and north-eastward, and opposite directions.

In the bight immediately westward of Khondrò Kavò is a village, affording a good landmark, called Kastelli Melapotamo. It is very exposed to the northward, but is a fairly important place. Landing is reported to be possible at all times on a small sandy beach about 500 yards to the westward of the usual landing place, under the lee of rocks which are nearly awash.

**Bali bay** (*Lat. 35° 25' N., Long. 24° 49' E.*), 7 miles eastward of Liano Kavò, has a cove on its western side, where coasting craft anchor and secure to the shore, finding shelter from the northerly gales of summer, which in general, blow from N.N.W. and North. It is only available for coasters, but is mentioned here as being a place of refuge for vessels of light draught in case of need where, by dropping an anchor off the mouth of the cove in about 6 or 7 fathoms, and hauling in under its northern point, good shelter may be obtained during the usual summer gales. Its position may be known by two sharp peaks rising just over it, to the westward of which are two or three old towers on a lower ridge rising gradually from the coast at the end of Rhithymno beach.

This cove seems to have been a recognised port of Crete in ancient days, as the Panormus Portus, or Astale of the Stadiasmus, there being

*General charts 2536a, 2836a.*

*Chart 2536a, Western part of Candia or Crete. Var. 3° 10' W.*

no other harbour on this part of the coast with which to identify it; the ruins of a small coast town and fortress exist about 5 miles to the westward, but there is no port there.

- 5 **Current.**—It has been reported that during the month of April, 1897, the currents appeared to be very variable between Akrotiri and Candia bay, but that an easterly current was generally experienced, the winds being usually from a direction westward of north and south; and also that during the month of June, 1905, very little current was  
10 experienced on the north coast of Crete, but what there was was always to the eastward. A curious phenomenon appears off this coast, after a N.W. gale. The water becomes a pale green for a distance of from one to 2 miles, according to the length of time the wind has been blowing, having the appearance of shoal water, the line of demarcation be-  
15 tween it and the outer blue water being very distinct.

*Chart 2536b, Eastern part of Candia or Crete.*

- Cape Stavros**, about 9 miles eastward of Bali bay, is a very conspicuous low-lying point, having a long tongue, and is a very good mark when approaching from eastward or westward. Phodele bay, on  
20 the western side of Cape Stavros, is of no importance.

There is a sanitary guardhouse at Phodele. See Quarantine regulations, page 22.

- Cape Dhia**, about  $2\frac{1}{2}$  miles east-south-east from Cape Stavros, terminates the high and rugged coast which separates the bay of  
25 Rhithymno from the bay of Candia, and is clear of danger. It has a small rock off it, which looks like a sail when approaching from the westward.

- Panagia point** (*Lat. 35° 23' N., Long. 25° 04' E.*).—This head-land, 2 miles south-eastward of Cape Dhia, has two projecting points.  
30 The northern one may be known by its very rugged, barren appearance, having no vegetation whatever on its summit, which is 270 feet high. The south-eastern projection, which is called Panagia point, possesses some vegetation, is lower, and has a more even top than the 270-feet summit.

- 35 **Rodia.**—From Panagia point, the coast trends southward for  $2\frac{3}{4}$  miles; its character then changes to that of a low shore which continues eastward  $3\frac{3}{4}$  miles to Megalo Kastron. Two miles southward from Panagia point, is the little valley of Rodia, which descends from a village of the same name, situated high on the sides of the mountains  
40 over that shore; off this valley there is anchorage.

- Here, the Venetian merchant vessels of large burthen used to find safe anchorage in the summer season, between April and November, in order to embark their cargoes direct from Crete. A fort called Palaio  
Kastro commanded the roadstead in the time of the Venetians, and its  
45 remains exist on a rock just over the mouth of the Rodia valley.

*General chart 2836a.*







*Mt. Psiloriti  
or Itha.*

*Lighthouse.*

Megalo Kastron from the anchorage.

*Mount Inikta.*

*Chart 2536b, Eastern part of Candia or Crete. Var. 3° 10' W.*

**The anchorage** is in from 15 to 25 fathoms water, at 2 and 3 cables from the base of the ruined fort, where there is good shelter in all ordinary gales from the northward, as they seldom veer to the eastward of N.N.E., except in the winter months. 5

**Water.**—A supply of good water can be easily obtained from the mouth of the large rivulet which flows into the western part of Candia bay near Armyro, but not at the Armyro rivulet, as that is brackish. *Plan 1904, Megalo Kastron or Candia.*

**MEGALO KASTRON** or **Candia town** (ancient *Hera-  
klea*) is situated on the low shore of Candia bay, 7 miles south-east-  
ward of Cape Dhia, with a small artificial harbour. The fortifications  
surrounding the town have a circumference of about  $2\frac{1}{2}$  miles, and  
although much injured by the memorable siege it endured before the  
Turks took it from the Venetians in the year 1669, and from recent  
earthquakes and neglect, monuments of the skill and wealth of this  
once-powerful republic still exist. 10  
15

This town was perhaps unequalled by any coast town in the Levant for strength and beauty, and bears evidence of having been a fine as well as a large city; several churches, fountains, and public buildings of that time still remain, although they are now mostly in partial ruin, caused either by the earthquake of 1856 or from previous neglect. *See sketch opposite and on chart 2536b.* 20

The Greek church (*Lat. 35° 20' N., Long. 25° 09' E.*), with a dome and two square towers on its eastern side, is the most conspicuous object in the town. 25

A short distance from Megalo Kastron are the remains of the Minoan city of Knossos discovered in 1901.

The population of the town of Megalo Kastron or Candia at the census of 1913 was 25,185. 30

There is a British Vice-Consul at Megalo Kastron.

**The harbour** at the north-east angle of the town, is formed by two moles, the western one running out about 55° true, 320 yards; the eastern extending about 14° true, 130 yards, leaving a breadth in the entrance of about 50 yards. In summer and in fine weather a vessel drawing 12 feet water may enter, but in winter or with any swell on, a vessel should not draw more than 10 feet. The plan shows a depth of 11 feet in the entrance. Strong north-east winds are said to reduce the water in the harbour. In 1905, it was reported that sand had so filled the harbour, that only small sailing vessels could enter. 35  
40

There are no jetties in the harbour, nor cranes to facilitate the landing of heavy articles; 10 or 12 vessels from 100 to 150 tons can find accommodation within it. *See view on plan 1904.*

Lieut. G. B. Hutton, of H.M.S. *Starling*, in September, 1889, remarks: "The northerly wind here causes a very nasty sea at the entrance of the harbour, and a vessel secured alongside the west mole, 45

*General charts 2536b, 2836a.*

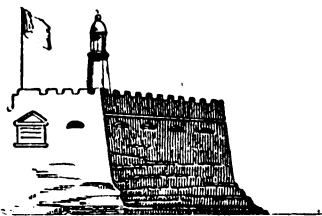
*Plan 1904, Megalo Kastron, or Candia. Var. 3° 10' W.*

- “under the lighthouse fort, must look well to her moorings.” The *Starling* carried away her bower cable, a 2½-inch steel wire, and a 4-inch hemp hawser during one night. The safest plan is to lie with  
 5 bow towards the west mole, secured by the two bower cables to bollards, and the stream-anchor out astern.

There is a health office at Megalo Kastron. See Quarantine regulations, page 22.

- LIGHT** (*Lat. 35° 20' N., Long. 25° 09' E.*).—A light is exhibited  
 10 at an elevation of 52 feet above the sea, from a white tower on the extremity of the mole on the northern side of entrance to Megalo Kastron.

- Anchorage.**—There is good  
 15 anchorage in the road off the town during summer, for a well-found vessel, at about three-quarters of a mile northward of the lighthouse, in 18 fathoms water, muddy sand. A steamer may



Megalo Kastron lighthouse.

- 20 anchor in 9 fathoms, 3 cables from the lighthouse; but a vessel which cannot enter the harbour, and is waiting for a cargo in winter, will find either East bay, or Panagia creek, at the head of Middle bay, in the island of Standia, a safe anchorage to remain in; Panagia is the more sheltered, and here the merchant ships of large burden in the time of  
 25 the Venetians used to lie to discharge or receive their cargoes from sailing lighters sent out from the town.

In order to avoid fouling the telegraph cables, vessels are recommended not to anchor to the eastward of a line drawn 30° true from the east (inner) corner of the eastern breakwater.

- 30 In July and August a continuous N.W. wind is experienced at the anchorage, which moderates at night, freshens at sunrise, and attains its full strength about noon, attaining considerable strength and raising a heavy sea at the anchorage. During these months an anchorage about 2 cables N.E. from the lighthouse will generally give the ships'  
 35 boats a leading wind to and from the harbour.

- The navigating officer of H.M.S. *Anson*, which was anchored off the town in the winter of 1898, considers that signs of a coming northerly gale are a swell, and drop in temperature. He also noticed that the belt of light-coloured water which usually fringes the shore to beyond  
 40 the large ships' anchorage, was much narrower a few hours before a northerly gale.

**Supplies.**—Fresh meat, vegetables, and fruit are obtainable, but the coal kept in stock is small, only about 150 tons. Good water is obtained from the harbour pipes.

- 45 **Communication.**—There is weekly communication with the  
*General charts 2536b, 2836a.*

*Plan 1904, Megalo Kastron or Candia. Var. 3° 10' W.*

ports of Egypt and Greece, by the following companies, namely, Panhellenic, and Greek Company of Syra.

The telegraph office is open until midnight.

**Trade.—Shipping.**—The exports, consisting principally of 5  
olive oil, wine, soap, locust-beans, fruit, and silk, were valued at £307,000 in 1906.

The imports, consisting principally of flour, salt fish, tobacco, petroleum, timber, iron, cotton and woollen goods, were valued at £340,290 in that year, of which £93,500 came from the United Kingdom. In 10  
1911 the value of imports from the United Kingdom was about £66,000.

In 1911, 504 steam vessels, of 399,022 tons, and 682 sailing vessels, of 13,570 tons, entered the port; of these, seven steam vessels, of 7,009 tons, and three sailing vessels, of 377 tons, were British. 15

**Meteorological table.**—*See page 500.*

**Telegraph cables** are laid from Megalo Kastron to Khania, Sitia bay, and Rhithymno, in Crete; communication with the outer world is had by means of cable direct to Syra, and viâ Sitia bay to Rhodes and Alexandria. 20

*Chart 2536b, Eastern part of Candia or Crete.*

**STANDIA ISLAND** (*Lat. 35° 27' N., Long. 25° 14' E.*) (ancient *Dia*), lying  $6\frac{1}{2}$  miles north-eastward of the town of Megalo Kastron, is an elevated mass of limestone, bare and sterile throughout; its highest part, near the centre, rising 870 feet above the sea. The 25  
island is 3 miles long, and 2 miles wide; its northern coast is precipitous, and its southern is steep also, but indented with four bays, three of which afford anchorage and shelter from northerly gales. These bays are useful for coaling and similar operations in northerly winds.

There are rabbits and goats on the island, quite wild, but difficult to reach in consequence of the heavy nature of the ground. 30

*Plan 2982, Anchorages on South coast of Standia island.*

**East bay** would hold 15 or 20 small vessels when moored with their sterns to the shore, and an anchor in the centre, in not less than 14 or 15 fathoms water, from whence they would not drag with 35  
southerly winds, as the bank is steep and the holding ground good.

A conspicuous stone block lies close to the shore at the head of East bay, which, bearing 359° true, makes a good mark for the centre of the bay.

A wreck lies about 15 yards off the point on the east side of the bay. 40  
 $2\frac{1}{2}$  cables south-south-eastward from the stone block above mentioned.

In August, 1897, anchorage was found in the mouth of this bay in 43 fathoms, with the east side of the stone block bearing 347° true, and Middle bluff (the point dividing East and Middle bays) bearing 264° true; and in February of the same year good anchorage was 45

*General charts 2536b, 2836a.*

*Plan 2982, Anchorages on South side of Standia island. Var. 3° 10' W.* found in 17 fathoms in the centre of the bay, with the stone block bearing 358° true, distant  $1\frac{1}{4}$  cables, but as the distance between the 5-fathoms lines on each side is less than  $1\frac{1}{2}$  cables, the head of the bay is not suitable for long ships.

**Middle bay** (*Lat. 35° 26' N., Long. 25° 14' E.*), the next westward, has a well-sheltered creek at its head, named Panagia, running north-easterly to the mouth of a rocky ravine. Here, a few vessels can secure to both shores, and the tranquillity of the creek with the depth of water alongside the shore, renders it a most convenient place to effect repairs.

Middle bay should be used by large ships, anchoring in 38 fathoms in the centre of the bay.

**Directions.**—As anchoring-marks, a pair of temporary beacons, whitewashed, were put up in 1897 on the point at the head of the bay, dividing Panagia creek from the cove westward of it. Another pair were erected near the west shore,  $1\frac{2}{3}$  cables northward of Cliff point, the west entrance point to Middle bay. The point of intersection of these lines bears about 54° true, distant  $2\frac{1}{3}$  cables from Cliff point.

As it is necessary for a large ship to anchor exactly in the middle of the bay, it is best before arriving in position, to ease down  $2\frac{1}{2}$  shackles of cable, and the remainder on the spot, to avoid being drifted away by the strong eddy winds while the whole three shackles were being eased down. The northern beacons in line bear 13° true, and the western pair 278° true, when in line.

**Royal Oak bay**, the next west of Middle bay, affords, for vessels less than 350 feet in length, more shelter than Middle bay. The depth of water is about the same, bottom sand and shells.

West bay is of little service.

*Chart 2536b, Eastern part of Candia or Crete.*

**Islets.**—Two islets lie close to Standia, one named Glaro-nisi or Gull islet, to the north-westward, and Paximadi, 355 feet high (reported in 1905 to be only 145 feet high),  $1\frac{1}{2}$  miles to the eastward, off which the water is very deep. A rocky reef, partly above water, almost closes the passage between Glaro-nisi and Standia.

**Water.**—There is no good water on Standia island, but it may be procured at the Kartaro river,  $2\frac{2}{3}$  miles eastward of Megalo Kastron.

**OVO** (*Lat. 35° 36' N., Long. 25° 35' E.*), a precipitous rock or islet, 170 feet high, lies  $18\frac{1}{4}$  miles, 61° true, from the north-east point of Standia, and has deep water all round it.

*Plan of Khersonisos bay on 2715.*

**CAPE KHERSONISOS** lies 12 miles eastward of Megalo Kastron, and the coast is nearly straight between them. The cape may be known by three windmills and a church upon it,

*General charts 2536b, 2836a, 2606.*

*Plan of Khersonisos bay on 2715. Var. 3° W.*

The interior of Crete between Megalo Kastron and this cape is comparatively low, being a depression lying between the eastern base of Psiloriti or Mount Ida; and the third highest range of mountains called Lasethe, which rises to a height of 7,100 feet, southward of the Bay of Malea. 5

**Rocks.**—A rock lies at the foot of the cape, and shallow water extends nearly 2 cables outside it. At a little more than half a mile southward of the cape and  $1\frac{1}{2}$  cables from the shore, is another rock, square, and 7 feet high, called Square rock, with sunken rocks around it; between the cape and Square rock is Khersonisos bay. 10

**Khersonisos bay.**—During the summer gales, which prevail from the north-north-west, coasting craft and local traders take shelter in Khersonisos bay, close under the cape, in 5 or 6 fathoms water, sand and weed, or anchor there to load with carobs or grain, the main produce of this district. Good shelter was found under Cape Khersonisos during a strong northerly summer gale, although the swell was a little inconvenient. A good anchorage for a large ship is in 9 to 10 fathoms,  $5\frac{1}{2}$  cables,  $60^\circ$  true, from the ancient fortress of Khersonisos (*Lat.  $35^\circ 19' N.$ , Long.  $25^\circ 25' E.$* ). 15 20

Southward of the bay is the small peninsula and ancient port of Khersonisos, the harbour of Lyttus, a city of some celebrity in the early history of Crete, and situated on the flanks of the Lasethe mountains. The port is now too shallow to be available, although the moles exist, besides a theatre and other remains of this once flourishing seaport town. 25

There is a sanitary station at Khersonisos. *See Quarantine regulations, page 22.*

*Chart 2536b, Eastern part of Candia or Crete.*

**Malea bay** affords poor anchorage ground, the bottom to the eastward of Khersonisos being shallow and rocky for half a mile from the shore. Anchorage was reported in 1905 in 16 fathoms with a white hut on the islet off Malea village, in line,  $166^\circ$  true, with some red-roofed sheds on the foreshore, which indicate the position of the village. From the head of the bay, the bold coast trends in a general easterly direction for nearly 17 miles to Cape St. John or Spinalonga. *See view of Candia from the island of Ovo on chart 2536b.* 30 35



*Spinalonga peninsula.*

*Cape St. John.*

View of Spinalonga,  $216^\circ$  true, 9 miles.

**CAPE ST. JOHN or SPINALONGA**, 300 feet high, is well known to the local mariners for the force and constancy with  
*General charts 2536b, 2836a, 2606.*

*Chart 2536b, Eastern part of Candia or Crete. Var. 3° W.*

which the northerly breezes blow from within a few miles of it, towards the deep Gulf of Mirabella, and over the Isthmus of Hierápetra at the head of this gulf, which is the lowest and narrowest part of the island of Crete, being only 6 miles across to the southern shore.

**LIGHTS** (*Lat. 35° 20' N., Long. 25° 47' E.*).—Two lights placed vertically are shown on the extremity of Cape St. John or Spinalonga, the upper being elevated 154 feet above the sea.

*Plan of Spinalonga harbour on 2850.*

**SPINALONGA HARBOUR** is a spacious sheet of water, enclosed by a long peninsula, also called Spinalonga, immediately south-westward of Cape St. John. Although the southern part of the harbour has from 4 to 4½ fathoms water over a great portion of it, a bank with only 12 feet on it stretches across from the north end of the peninsula to the mainland of Crete, and thus renders this fine inlet available for coasters of light draught only. The anchorage for larger vessels is limited to a small space just north of the fortified islet, lying close off the northern end of the peninsula, but being so immediately under the high precipices of Cape St. John, it is difficult and dangerous for sailing vessels to enter, in consequence of the frequent and violent squalls which descend from this stormy point. *See view of Spinalonga on chart 2536b.*

Vessels not exceeding 18 feet draught of water will find safe anchorage westward of Spinalonga island, with the north end of it bearing 74° true, 2 cables, and the mouth of a gully on the north shore bearing 347° true. S.S.W. winds are squally, but South winds blow steadily and right down the harbour.

**Spinalonga** has a small village within the now dilapidated fortress built by the Venetians on the islet. The island is inhabited by about 80 Mohammedan families who maintain themselves by fishing, and coast trade, and have the reputation of being skilful and excellent seamen; they have a few schooners and caïques, and carry on a trade with Asia Minor for grain and wood required to supply the larger towns of Crete. Spinalonga produces grain and whetstones, for the latter of which it has always been noted, the best Turkey stone coming from here.

**Supplies.**—Provisions of all kinds may be obtained here at moderate prices.

*Plan of Poro bay on 2850.*

**PORT KOLOKITHIA**, on the eastern side of Spinalonga peninsula, is formed by the islet of Kolokithia, which is narrow, and half a mile in length north and south, with a passage at either end. The port is open to the north-eastward, and therefore never frequented as a winter anchorage. There are rocks extending a little off from both points of the northern entrance, in which there is 10 to 17 fathoms

*General charts 2536b, 2836a, 2606.*





To face page 45.]



*Gulf of Mirabella.*

*Agios Antonio  
nisi.*

*Mikro nisi.*

*Kavo  
Pleorah.*

*C. Vagi.*

*Kolokithia I.*

Approaching Poro bay and Port Nikolo from the north-east.

*Plan of Poro bay on 2850. Var. 3° W.*

water in mid-channel. The southern entrance, called Fifteen feet passage, is contracted by reefs from either side, leaving a narrow tortuous passage into the port, carrying only 15 feet water. The port is  $3\frac{1}{4}$  cables wide and has general depths of 6 to 13 fathoms, sand. It was probably the port of *Olontia* in ancient times, the ruins of which city are seen upon the Poro isthmus. A great part of the city has been submerged by a recent subsidence of the eastern part of Crete, which nearly made Spinalonga peninsula an island also, for the isthmus is only now just above the sea level, and with strong north winds the sea beats over it. 5 10

**PORO BAY ANCHORAGE.**—On the southern side of the peninsula of Spinalonga, is a fine bay more than a mile wide, called Poro, where there is excellent shelter in a northerly or north-easterly gale for a squadron, and good holding ground of muddy sand and weed, in from 15 to 20 fathoms. This is the only bay eastward of Suda, for which a large vessel could run for shelter in the winter season when caught in a north-easterly gale. It is open to the S.E., but as the fetch is only 7 or 8 miles across the Mirabella gulf, a well-found vessel would ride any gale out from that quarter, or, by watching the ample warning then always given by the barometer when changing from north to south, could put out to sea. 15 20

The lighthouse on Mikro nisi (*see below*) is a good anchoring mark by day or night. *See view opposite and on plan 2850.*

**Coral bank**—Vessels anchoring, should avoid this bank with coral bottom. The centre, with 17 fathoms, bears  $254^{\circ}$  true,  $6\frac{1}{2}$  cables from Cape Vagi, the north-eastern entrance point of Poro bay. 25

**Canal.**—A boat canal was dug at the beginning of the international occupation to communicate between Poro bay and Spinalonga harbour, but it tends to silt up and is encumbered by blocks of stone which have fallen away from the quay. A picket boat drawing 2 feet could not get through without touching near the bridge. 30

*Plan of Port Nikolo on 2850.*

**PORT NIKOLO (AGIOS NIKOLAOS)** (*Lat.  $35^{\circ} 12'$  N., Long.  $25^{\circ} 44'$  E.*) is formed between the coast and the two islets of Agios Antonio (Nikolaos) nisi, and Mikro nisi, the former much the larger, being  $4\frac{1}{2}$  cables in length north and south, and 140 feet high. Mikro is  $1\frac{1}{2}$  cables in length, 75 feet high, and separated from Antonio on the south by a passage 50 yards wide and one fathom deep. These islets lie about 3 miles south-south-west of the peninsula of Spinalonga, and Agios Antonio is  $3\frac{1}{2}$  cables from the nearest part of the mainland of Crete. *See view opposite and on plan.* 35 40

There is a health office at Port Nikolo. *See Quarantine regulations, page 22.*

*General charts 2536b, 2836a, 2606.*

*Plan of Port Nikolo on 2850. Var. 3° W.*

**LIGHT.**—A light is exhibited, at an elevation of 82 feet, from a white iron mast over a white house, with red roof, 27 feet high, near the north point of Mikro nisi.

- 5 **Mikro nisi rock**, with 3 fathoms water on it, is on the outer end of a bank extending east-north-eastward  $1\frac{1}{3}$  cables from the north point of Mikro nisi.

**Nikolo nisi**, 2 feet high and surrounded by shoal water, is situated westward  $4\frac{1}{3}$  cables from the same extremity of Mikro nisi.

- 10 In the narrow passage between Nikolo nisi and the main, distant  $1\frac{1}{3}$  cables, there is a depth of 5 fathoms.

The south extreme of the small promontory westward of this islet is named Nikolo point, and westward of this promontory a shallow narrow creek runs in 3 cables to the northward.

- 15 **Nikolo rock**, with  $2\frac{1}{2}$  fathoms on it, lies south-south-east, distant  $1\frac{2}{3}$  cables from Nikolo point. Westward and northward of this rock, there are depths of  $5\frac{3}{4}$  to 7 fathoms, while in the main channel between the rock and Agios Antonio, distant  $2\frac{3}{4}$  cables, there is a depth of 9 fathoms.

- 20 **Six-fathom patch** is a rocky bank with that depth on it, lying nearly 2 cables westward of the north point of Agios Antonio.

**Anchorage for coasting vessels.**—This anchorage in 8 to 9 fathoms is on the north-west side of Agios Antonio, and eastward of Six-fathom patch, and this part of the port is always preferred by the  
25 local traders and Levant sailors, who are acquainted with it, to Spinalonga, for with one anchor to the westward and a stern-fast to Agios Antonio, a vessel will lie landlocked.

- Principal anchorage** (*Lat. 35° 12' N., Long. 25° 44' E.*).—This anchorage in 7 to 8 fathoms over sand, weed, and shells, is in the  
30 southern part of Port Nikolo, and westward of the south end of Agios Antonio, where, south of Nikolo rock, there is anchorage space about 3 cables in diameter, with a passage in from the south-eastward, 2 cables broad, between the 5-fathoms lines on each side, and a depth of 7 fathoms; it is partly sheltered from the southward by Mavro Kavo,  
35 a rocky point, upon which are some ruined habitations and churches of what was in the time of the Venetians a small fishing and trading town, called the Borgo di Mirabella, and was then the chief place of trade in this neighbourhood, its port being then also preferred to Spinalonga, which was a coast garrison only.

- 40 Mavro Kavo seems also to be the site of the ancient *Kamiro*.

In a north-west or northerly gale a large vessel will find satisfactory anchorage south of Agios Antonio nisi; it is possible from there to obtain provisions from Port Nikolo, without being exposed to the

*General charts 2536b, 2836a, 2606.*

*Plan of Port Nikolo on 2850. Var. 3° W.*

squalls passing over the isthmus of Spinalonga, as is the case in Poro bay.

**Exports.**—Carobs and oil are the chief exports of the Mirabella district, of which a few cargoes are annually exported to Europe and to Constantinople, and the produce is increasing. 5

**Telegraph.**—Mirabella is a telegraph station.

*Chart 2536b, Eastern part of Candia or Crete.*

**Water.**—The only place in the Gulf of Mirabella, where a vessel can procure water, is at the valley southward of Port Nikolo, where by sinking a well 3 or 4 feet deep in the bed of the dry water course, and at a few yards from the sea, an abundant supply of excellent water may be procured at all seasons. 10

**Paschiamo.**—At the head of the Gulf of Mirabella, anchorage may be obtained at 2 cables from a landing place called Paschiamo, to the southward of Kunithia island. From here a good carriage road leads to Hierápetra on the south coast of Crete. 15

There is a sanitary guardhouse at Moklo. *See Quarantine regulations, page 22.*

At Gurnia, near here, the remains of an extensive city of the Minoan period have recently been discovered. 20

**PSYRA ISLET**, on the south-east side of Mirabella gulf, is  $1\frac{1}{4}$  miles in length north-east and south-west, and its summit 693 feet high. Half-way across the Gulf of Mirabella, in a straight line from Psyra to the islet of Agios Antonio (Nikolaos) nisi, lies Mirabella bank, having only 24 fathoms water on it, close to a depth of 123 fathoms. 25

**Soundings.**—*See North coast, page 25.*

**SITIA PENINSULA.**—On the eastern side of the Gulf of Mirabella, is the beginning of the large peninsula and Eparchia of Sitia, from which rises the fourth group of mountains of Crete. Aphendi Vuno, the highest point, immediately over the Isthmus of Hierápetra at the commencement of the promontory, is 4,850 feet above the sea. The whole peninsula is very mountainous, and has several upland plains and fertile valleys, the largest being that of Sitia. 30

*Plan of Sitia bay on sheet 2724.* 35

**Cape Sitia**, the western entrance point of Sitia bay, has a rocky spit, extending from it two-thirds of a cable, in a north-easterly direction.

**LIGHT** (*Lat. 35° 14' N., Long. 26° 08' E.*).—A light is shown on Cape Sitia at an elevation of 82 feet. 40

**SITIA BAY.**—At the mouth of the valley of Sitia, is a wide bay open to the north, and bounded on the east by the long and indented promontory of Sidero. At the western angle of the bay, one mile from Cape Sitia, and standing upon a gently sloping but rocky

*General charts 2536b, 2836a, 2606.*

*Plan of Sitia bay on sheet 2724. Var. 2° 50' W.*

shore, are the ruined fortress and town of Sitia, built by the Venetians, close under which there is good anchorage with shelter from the prevailing northerly winds. A chain should be carried to the shore under  
 5 the fort, as a bow-fast for all vessels of light draught, or at about 2 cables northward of it, by all large-class trading vessels desiring to anchor here, where, with the outer anchor in 7 or 8 fathoms water, mud bottom,  $1\frac{1}{2}$  cables from the shore, Cape Sitia affords shelter from north-  
 10 westerly winds as far round as N.N.E., to the eastward of which point it rarely blows until after Christmas.

The best mark is the new Greek church, which may be recognised by its dome, and bearing 270° true, leads up to the anchorage. From the anchorage the church is nearly in line with the pier; the latter is not  
 15 very conspicuous, and a pilework structure lying further to the southward is liable to be mistaken for it by a stranger.

**Anchorage for large ships** will be found in 15 fathoms over mud, 92° true, distant half a mile from the pier.

A fort stands on the northern side of the town, near the ruins of the Venetian fortress. The Venetians had bollards or mooring posts cut  
 20 in the rocky shore for the convenience of their vessels trading or stationed here, which is a further indication of its security.

**Light.**—A light, elevated 36 feet, is shown from an iron hut on masonry base, 23 feet high, situated on the point immediately northward of the anchorage at Sitia (*Lat. 35° 12' N., Long. 26° 07' E.*).

25 **Water.**—There is a well of excellent water close to the angle of the bay, which is supplied by a copious spring, that never fails or diminishes.

**Pratique.—Supplies.**—A sanitary station and a Custom house have been established here. Vessels can now obtain pratique, and some  
 30 supplies.

*See Quarantine regulations, page 22.*

**Telegraph.** — Submarine cables, from Alexandria, Megalo Kastron, and Rhodes, are landed at Sitia. The town is also a telegraph station.

35 *Chart 2536b, Eastern part of Candia or Crete.*

**YANISADES** islets, four in number, lie off Sitia bay at  $6\frac{1}{4}$  miles north-north-eastward from Cape Sitia. They extend over a distance of  $3\frac{3}{4}$  miles north and south, with deep water all round them. Yanisada, the southern islet, is 485 feet high, while Dragonara, the next  
 40 north, is 15 feet higher, and the largest; they are each about 2 miles long, and can be seen from a distance of about 30 miles. Paximada, the northern, is about three-quarters of a mile long. These islands are the ancient *Dionysiades Insule*, and were once the haunt of pirates.

*General charts 2536b, 2836a, 2606.*

*Plan of anchorages near Cape Sidero on 1555. Var. 2° 50' W.*

**SPITFIRE ROCK** (*Lat. 35° 19' N., Long. 26° 16' E.*).—This dangerous rock, about 12 yards in extent, rising from deep water, and having less than 6 feet water over it, lies nearly midway between the east end of Yanisada and Cape Sidero, exactly in the track of vessels running to leeward of the Yanisades, with the prevailing N.N.W. winds of summer. 5

**Clearing marks.**—Spitfire rock bears 272° true from Cape Sidero lighthouse, and vessels may pass to the northward of the rock either by keeping the southern side of Yanisada island bearing southward of 266° true (on which bearing Cape St. John or Spinalonga, see page 43, will be shut in behind Yanisada island), or by keeping Cape Sidero in line with the north side of the islet of the same name, situated about 5 cables westward of the cape, bearing 97° true. 10

Mount Mothès, 1,776 feet high, in line with Black islet (half a mile south-westward of Cape Mavro), 190° true, leads westward of the rock. See views A, B, and C on chart 2536b. 15



*Cape Sidero and islet.*

*Kereamathi islets.*

Cape Sidero seen eastward of Sidero islet.

The Kereamathi islets on the southern side of entrance to Port Kereamathi (see page 50), about half a mile apart, 34 and 36 feet high, when in line bearing 148° true, lead very close westward of Spitfire rock, and therefore the southernmost islet should be kept open to right or south-westward of the northern; these two islets are near, conspicuous, and cannot be mistaken. 20



*Mount Mothès.  
Black islet.*

Mount Mothès in line with Black islet, bearing 190° true.

**Coast.**—The promontory of Sidero, for 4 miles south-westward of the cape of that name, is very irregularly formed, the north-eastern portion being almost divided into two islands, by Ports Tenda and Kereamathi on the north-west side almost meeting small bays on the opposite side. 25

**Port Tenda** (*Lat. 35° 17' N., Long. 26° 17' E.*), the south-western of these ports, has a bay in each corner affording shelter with off-shore winds, but the distance of 1½ miles between the entrance points of the port exposes it to north-westerly winds. 30

*General charts 2536b, 2836a, 2606.*

*Plan of anchorages near Cape Sidero on 1555. Var.  $2^{\circ} 50'$  W.*

**Rock.**—A rock with less than 6 feet water over it, lies 3 cables north-north-eastward of the south-west entrance point of Port Tenda, and eastward  $1\frac{1}{2}$  cables from this rock is a patch of 4 fathoms.

- 5 **Kereamathi islets** consist of two small islets, the northern of which is 34 feet high, and lies  $6\frac{1}{2}$  cables north-westward of the point dividing Ports Tenda and Kereamathi; the southern is 36 feet high, and lies 3 cables west-south-westward of the same point. These two islets, as before stated, when in line lead close westward of Spitfire  
10 rock.

**Rocks**, with less than 6 feet of water on them, lie close to and  $1\frac{1}{2}$  cables north-eastward of the north end, also a rocky shoal extends for one cable south-eastward from the south end of the southern Kereamathi islet.

- 15 **Port Kereamathi** is an inlet running in about three-quarters of a mile, and is used only by country boats.

**Shoal.**—A shoal with  $4\frac{1}{2}$  fathoms lies  $1\frac{1}{4}$  cables westward of the western extreme of Cape Sidero promontory, on the north side of Port Kereamathi.

- 20 **Pinnacle rocks**, a cluster of rocks above and below water, on a rocky shoal  $2\frac{1}{4}$  cables long, lie  $1\frac{1}{4}$  miles westward of Cape Sidero, the outer part being nearly 3 cables from the shore of the promontory.

- Sidero islet**, 18 feet high, and a quarter of a cable in diameter, lies  $275^{\circ}$  true,  $5\frac{1}{2}$  cables from Cape Sidero, and about  $1\frac{1}{2}$  cables from  
25 the shore.

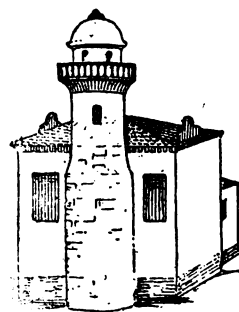
**A rock** with less than 6 feet on it, lies nearly a cable north-north-eastward of Sidero islet.

- CAPE SIDERO**, the north-east extremity of the island of Crete, is surmounted by a hill, 727 feet high, half a mile south-west  
30 of it. The cape, when bearing about  $286^{\circ}$  true, appears like an island.

**LIGHT** (*Lat.*  $35^{\circ} 19' N.$ , *Long.*  $26^{\circ} 20' E.$ ).

- A light is shown, at an elevation of 148 feet above the sea, from a lighthouse  
35 situated near the extremity of Cape Sidero.

- SIDERO REEF**, consisting of rocks, dry and awash, lies 3 cables eastward of the cape, with a depth of 10 to 15 fathoms between. The reef extends a third of a mile  
40 in a north-west and south-east direction, and the eastern elbow in the depth of  $3\frac{1}{2}$  fathoms bears  $86^{\circ}$  true, 9 cables from the lighthouse.



Cape Sidero lighthouse.

*General charts 2536b, 2836a, 2606.*

*Plan of anchorages near Cape Sidero on 1555. Var. 2° 50' W.*

East-north-eastward of Sidero reef, are two isolated shoals of  $3\frac{1}{4}$  and 4 fathoms, bearing  $77^\circ$  true, distant  $1\frac{2}{10}$  and  $1\frac{1}{3}$  miles, respectively, from Cape Sidero lighthouse. In rounding these dangers, the cape should be given a berth of 2 miles; from the westward, keep the passage between Dragonara and Yanisada just open, or the extremes of the two islands touching, bearing about  $271^\circ$  true, until the eastern extreme of Elasa island bears  $193^\circ$  true. 5

**Port Agios Ioannis** is the name given to a small cove on the east side of Cape Sidero; the port has a depth of 2 fathoms, and the head of it is distant from the lighthouse about 150 yards. The cove affords shelter to the smaller class of coasting craft, and being almost screened under the cliffs and hills, was formerly the hiding place of piratical row-boats, that lay lurking here and in the islands off it. In the summer and autumn, the neighbourhood is frequented by numerous sponge-boats. 15

**Wreck rocks.**—These rocks are awash, and lie with the outer one bearing  $138^\circ$  true, distant three-quarters of a mile from Cape Sidero lighthouse. Lying a quarter of a mile from the shore, they add to the difficulty of attempting the channel between Sidero reef and the cape. 20

**Dhaskalia island**, 20 feet high, is situated 2 cables off the south point of the small bay on the south side of the eastern part of Sidero promontory, opposite Port Kereamathi, with a 15-fathoms channel between it and the shore; shoal water extends nearly a cable off its south-eastern extreme. In the bay there are depths of 7 to 25 fathoms, where a small vessel might obtain shelter in northerly or westerly winds. 25

**ELASA ISLAND** (*Lat.  $35^\circ 16'$  N., Long.  $26^\circ 21'$  E.*).—The flat island of Elasa, 252 feet high, is  $1\frac{1}{4}$  miles in length, and lies with its north-west extremity bearing  $153^\circ$  true, distant  $2\frac{1}{4}$  miles from Cape Sidero; on its southern side is a small creek which used to afford a hidden retreat to the piratical craft of modern times, and to the galley-rover from Algiers in more ancient days. 30

*Chart 2536b, Eastern part of Candia or Crete.* 35

**Coast.**—From Cape Sidero, the eastern coast of the promontory trends south-westward 4 miles to Eremopoli bay, thence southward  $4\frac{1}{2}$  miles, when it curves eastward 2 miles to Cape Plaka, forming Grandes bay.

*Plan of Eremopoli bay on 2715.* 40

**Eremopoli bay** is convenient for vessels in the summer months when unable to contend against the then prevailing winds and currents from the northward, and bound for Constantinople, or into the archi-

*General charts 2536b, 2836a, 2606.*



*Plan of Eremopoli bay on 2715. Var. 2° 50' W.*

pelago, from Alexandria or Africa. The anchorage for large vessels is in from 12 to 17 fathoms, at about half a mile, 52° true, from Black rock; coasting craft go farther in. The bottom is muddy sand with  
5 weed, and fair holding ground.

*Plan of Grandes bay on 2724.*

**GRANDES BAY.**—Kuremèno, 3 miles southward of Eremopoli, is a sandy bay on the northern side of the red conical hill of Palaio Kastro, 292 feet high, and affords good shelter during  
10 southerly winds in from 9 to 10 fathoms water, whence it shoals gradually to the shore.

Kuremeno is quite equal to Eremopoli, as a place of shelter during the summer gales from north to north-west, and can be quitted without difficulty, immediately the gale moderates.

15 **Grandes islands**, in the southern part of the bay of that name, and three-quarters of a mile north-westward of Cape Plaka, consist of a narrow islet, 7 cables long north-east and south-west, 105 feet high, and a small islet 30 feet high, a cable off its south-west extremity.

**Grandes reef** (*Lat. 35° 13' N., Long. 26° 19' E.*).—A small  
20 islet, 8 feet high, lies nearly a cable from the north-east end of the large island. From this islet, a reef with less than 6 feet water on it, extends north-eastward 2½ cables, and is generally indicated by ripples or breakers upon it.

A well-found vessel will find good shelter with northerly gales, south  
25 of Grandes islands, but in not less than 18 or 20 fathoms.

**Supplies.**—No supplies can be obtained, but partridges are abundant on the hills in the vicinity.

**Water.**—There is a well of good water about 400 yards from the beach, on the south-western side and near the foot of Palaio Kastro  
30 hill, where a vessel might procure a little water in case of need by rolling casks to and from it.

**CAPE PLAKA** is a level, but high projection of the coast, situated 178° true, distant nearly 7½ miles from Cape Sidero. It is the most easterly point in the island of Crete, although less conspicuous as a headland than Cape Sidero. The water is deep close to  
35 its eastern side, and to within half a cable of its northern extremity.

*Chart 2536b, Eastern part of Candia or Crete.*

**COAST.**—**Caruba bay**, on the southern side of Cape Plaka, likewise affords anchorage with northerly gales, in 10 to 20 fathoms,  
40 sand, but is subject to strong gusts from the high land over it.

**Zakro bank**, with 9 fathoms on it, is the shallowest part of a bank 4½ miles southward of Cape Plaka, and one mile from the shore.

*General charts 2536b, 2836a, 2606.*

*Chart 2536b, Eastern part of Candia or Crete. Var. 2° 50' W.*

**Zakro bay** is small, and  $6\frac{1}{2}$  miles to the south-south-westward of Cape Plaka. Near the village, is a small plain confined between precipitous and barren ridges enclosing the valley, and which all have remarkable flat summits and naturally terraced sides, particularly the hill over the northern side of the bay. Zakro is on the site of the ancient *Itanos*. 5

**The Kavallos** are three rocky islets lying close to a point 4 miles south-westward of Zakro bay, with deep water close to them. Vessels may anchor north-eastward of these islets, at about half a mile from the shore, in from 12 to 15 fathoms water, on a sandy bottom; but the gusts from the mountains during northerly winds, descend with such violence all along this coast from Zakro to Hierápetra (page 66), that it is not advisable for any wind-bound vessel to bring up here, if she can work up to Grandes bay, or for a sailing vessel even to approach it nearer than 4 or 5 miles, and never with such winds to attempt to pass through the Kupho channel (page 67), for such is the force and suddenness of these squalls that very little canvas can be shown to them. 10 15

**Kavallos bay** (*Lat. 35° 02' N., Long. 26° 14' E.*) is the name given to the indentation north-westward of Kavallos islets. 20

**The currents** off the east end of Crete are variable, but more prevalent from the north-west or south-east, and run at a rate of from half a knot to a knot an hour.

The west and south coasts of Crete will now be described. 25

*Chart 2536a, Western part of Candia or Crete. Var. 3° 40' W.*

**West coast of Crete.**—From Cape Busa the coast trends southward for about 22 miles to Elaphonisi, thence south-eastward for about 4 miles to Kavo Krio, the south-west point of Crete.

Pondiko nisi, Grabusa harbour, and the Korykos promontory, of which latter Cape Kutri forms the southern end, have already been described on pages 23, 24. 30

*Plan of Kutri on 217.*

**CAPE KUTRI.**—The bay and cultivated plain of Akti, about 7 miles southward of Grabusa, and one-third along the western coast of Crete from the north, is between two high ranges of hills. At the northern extremity of the bay is Cape Kutri, bluff and cliffy, off which, to the south-south-westward, is the rugged islet of Petalides; a reef of rocks named Kutri reef, extends 3 cables from the islet in the same direction, but is separated from it by a very narrow 12-fathoms channel. See view on sheet 217. 35 40

The northern end of Petalides islet is separated from the south extreme of Cape Kutri by a passage  $1\frac{1}{2}$  cables wide leading into Akti bay,

*General charts 2836a, 2606.*

*Plan of Kutri on 217. Var. 3° 40' W.*

but it is further contracted by rocky ground extending from either side, and can only be used by small vessels.

Within Cape Kutri are some remains of the ancient town of *Phalasarna*; it was the western port of the neighbouring city of *Polyrrhenia*, and had an artificial harbour, but which, through an upheaval of the coast in historic times, is now inland; it has no inhabitants.

**Anchorage.** — There is anchorage within the islet and reef of Petalides, with northerly winds, but the ground is chiefly rocky, with sandy patches between all depths under 12 fathoms. A rock with 3 fathoms lies nearly one cable eastward of the north point of Petalides island, and a rock awash lies on the edge of the 3-fathoms line, extending one cable from the north-east side of the anchorage,  $4\frac{3}{4}$  cable south-eastward of Cape Kutri. It might, however, be found sometimes more convenient for a sailing vessel or steamer, on meeting a strong north-easterly gale at this entrance of the archipelago, to anchor here, than to run entirely to leeward of the island, particularly as a sailing vessel would find it difficult to gain the anchorage of Selino Kastelli, on the south coast of Crete (*see* page 55), if the gale was very violent, on account of the heavy gusts and squalls preventing canvas from being set.

*Chart 2536a, Western part of Candia or Crete.*

**ELAPHONISI** (*Lat. 35° 16' N., Long. 23° 31' E.*), or Stag islet, is a long flat island, lying nearly 15 miles southward of Cape Kutri and  $3\frac{1}{2}$  miles north-westward of Kavo Krio, but with merely a boat channel 2 or 3 feet deep between it and the shore. Its western extremity is its highest part, where it is also bold: but on the south side of the island there are dangerous rocky patches extending off it in that direction, to, and around Low islet, at a distance of nearly three-quarters of a mile.

**Anchorage.** — The water at the head of the bay to the east of Low islet is deep, and does not afford very commodious anchorage; but a few steamers could obtain convenient anchorage during a northerly gale in from 8 to 12 fathoms water, at 2 cables from the shore, and upon a bottom of sand.

The limited anchorage ground is off a ravine descending from some remarkable white patches on the side of the mountains above, and with Kavo Krio bearing about 50° true. This anchorage was found preferable with northerly gales to that of Selino Kastelli (*see* page 55), for temporary shelter, in consequence of being under comparatively low land, and therefore not subject to the violent squalls which are experienced at Selino Kastelli and along the south coast, with such winds; but the anchoring ground, as before remarked, is limited, the ground to the westward of it being uneven and foul, and to the east of it under the high land, much too deep.

*General charts 2536a, 2836a.*

Chart 2536a, Western part of Candia or Crete. Var.  $3^{\circ} 40' W$ .

**KAVO KRIO** (Lat.  $35^{\circ} 13' N.$ , Long.  $23^{\circ} 35' E.$ ), is the headland forming the south-western extremity of Crete. It was anciently called *Kriumetopon* or Ram's forehead, from its supposed resemblance to it; but although a somewhat bold termination of the western mountains of Crete, it is neither high nor remarkable as compared with other points and headlands. See view on chart 2536a. 5

There is a small cove for coasting boats, called Port Krio, with a rocky islet off it at 6 cables north-westward of the cape, which must be the port *Biennus* of the anonymous Periplus; but the recent elevation of the coast has much reduced its ancient limits and accommodation. 10

**South coast of Crete.**—The south coast of Crete, having no secure harbour, has no trade except in summer; trade is then carried on by three or four small schooners only, and a few coasting boats. A large part of the produce is transported on mules to the trading towns on the northern coast, where foreign export is alone permitted, so as to prevent smuggling upon this coast. Although there are no good ports on the south coast of Crete, there are anchorages off several bays during the summer months, or with northerly winds; but the water in general deepens very suddenly, and the bank or ground upon which anchorage can be obtained, is generally limited. There are a few dangers also, the most important of which are Kaloyeri reefs. See page 65. 15 20

**SELINO KASTELLI** is the westernmost anchorage on this coast, at  $4\frac{1}{2}$  miles eastward of Kavo Krio. The anchorage is sheltered by a low point or plain, at the extremity of which is a flat eminence forming a small peninsula and surrounded by a cliff. At a few miles distant, the peninsula looks like an island, and indeed must have been one in historic times, as the coast has been here elevated upwards of 20 feet since the ancient authors described it. The walls of a modern fort 6 feet high, built by the Turks on the ruins of a small Venetian fortress, stand on the northern part of the peninsula, and a rugged islet, about 40 feet high, lies close to its western point, with a shallow passage between. There is a small, conspicuous whitewashed chapel close north of the fort. On the peninsula are several conspicuous look-out towers, with conical tops, about 14 feet high. Although an important coast station in the time of the Venetians, it has now only a few inhabited houses, situated on the northern part of the peninsula. 25 30 35

**Anchorage.**—There is anchorage on either side of the peninsula during summer, but the bay on the eastern side of it being sheltered from westerly winds, is preferable, although it has a deeper and steeper bottom than the bay on the western side. 40

In 1905 anchorage was found in 16 fathoms in the east bay, with the chapel bearing  $323^{\circ}$  true, and the left extreme of the peninsula  $220^{\circ}$  true. 45

*General chart 2836a.*

*Chart 2536a, Western part of Candia or Crete. Var. 3° 40' W.*

A stream of good water issues from the adjacent valley through a line of plane trees and oleanders, and flows over a shingle beach to the sea just abreast of the eastern anchorage, which is in from 12 to 20 fathoms water, at 2 or 3 cables from the beach, and on a sandy bottom. The squalls with northerly gales are very violent here, in one of which, however, of great violence, H.M.S. *Spitfire* steamed in, and anchored to await its abatement, and rode securely for three days with two anchors ahead, and without starting either of them, although the bottom is steep.

The western bay (*Lat. 35° 13' N., Long. 23° 39' E.*) affords a longer extent of clean sand and mud bottom, the holding ground is good, and the depth more convenient for anchoring; a small vessel may get well sheltered from west winds under the low rocky point of Trakhili, by anchoring off one or two huts on the west side of this bay, where there is also a stream of good water from the adjacent valley, sufficient to supply a fleet. For a vessel merely desiring shelter during strong northerly winds, the western bay of Selino Kastelli is the best to anchor in.

In 1905 anchorage was found in 9 fathoms in the west bay, with the chapel bearing 59° true and the 40-foot rock 166° true.

**Caution.**—The depths in the western bay were reported in 1903 to be less than shown on the chart.

**COAST.—Madara.**—From Salino Kastelli the coast trends a little to the northward of east for  $4\frac{3}{4}$  miles to Kavø Flomi, and thence a little to the southward of east for  $15\frac{1}{2}$  miles to Kavø Muros, on the western side of Port Lutro. The part of the coast between Kavø Flomi and Port Lutro (*see* page 57) is the most picturesque part of Crete; lofty crags and ridges descend almost abruptly to the sea from the bold and bald summits of the Madara or White mountains (ancient *Leuce*), their lower and middle zones being sprinkled with forests of fir and cypress. The growth of these trees is, however, stunted, and more adapted for firewood than timber; the ibex is found upon the mountains, and within the forests, in considerable numbers. The Madara rises to the height of 8,100 feet, at 4 miles from the nearest part of the coast.

**Suia bay** is in front of a valley about  $2\frac{1}{4}$  miles north-eastward of Kavø Flomi, at the western base of the Madara; from Suia bay there is a road across to Khania, but there is no anchorage off it. In Agios Kyrkos, a bay about a mile to the west of it, there is temporary anchorage. Both Suia and Agios Kyrkos were the sites of ancient towns, and had ports, but they are now within the shore.

There is a sanitary guardhouse at Suia, and also at Thomaia about  $4\frac{3}{4}$  miles eastward. *See* Quarantine regulations, page 22.

*General chart 2836a.*

*Chart 2536a, Western part of Candia or Crete. Var. 3° 30' W.*

**Temporary anchorages.**—The bays, which exist at the mouth of every valley or gorge, between Selino Kastelli and Port Lutro, afford no anchorage for a sailing vessel. A steam vessel may, however, bring up, off some of them; namely, at Agios Kyrkos and Rumeli, 6 and 15 miles respectively eastward of Selino Kastelli, at from  $1\frac{1}{2}$  to  $2\frac{1}{2}$  cables from the shore, but merely as a temporary anchorage in fine weather.

*Plan of Port Lutro on 217.*

**PORT LUTRO** (*Lat. 35° 11' N., Long. 24° 04' E.*) (ancient *Phœnix* or *Phœnice*), immediately under the highest part of Madara, is the only bay on the south coast where a vessel would be quite secure in winter. It is about two-thirds of a mile north-eastward of Kavo Muros, and  $20\frac{3}{4}$  miles eastward of Selino Kastelli. The port is circular, open to the eastward, a little more than a cable deep, and about the same in breadth, with a rocky shoal extending nearly  $1\frac{1}{2}$  cables eastward from its south point, off which is the islet of Lutro, sheltering the area on the north; although so limited, it is said that formerly 15 or 16 small square-rigged vessels belonging to Sphakia, used to winter in it, with their sterns secured to the south shore of the port.

It is represented to be safe in winter, as the south winds seldom or never blow home against the lofty and precipitous mountains which rise above it, and the swell which then reaches the shore is consequently merely a dead swell causing only motion to the vessels without strain to their ground tackle.



*Kavo Muros.*

*Sphakia.*

Approach to Port Lutro from the south-westward.

The head of the port has a narrow slip of shingle beach in front of a garden, and a few houses, the position of which seems to confirm the statement of the natives regarding the safety of the port; for one of the houses is built within 10 feet of the sea, and shows no indication that the swell ever reached its foundations, consequently no damaging sea can exist within the port.

There is a sanitary guardhouse at Lutro. *See Quarantine regulations, page 22.*

The position of Lutro is best recognised from the sea by the town of Sphakia, 3 miles to the eastward, the houses of which can be seen several miles off, being the only town besides Hierápetra, standing immediately upon the south coast of Crete. The mountains also to

*General charts 2536a, 2836a.*

*Plan of Port Lutro on 217. Var. 3° 30' W.*

the eastward of it, are less precipitous and elevated than to westward, for the bald steeps of the Madara commence their rise just over it. See view on plan.

- 5     **Anchorage.**—The winds most feared by the natives are the northerly gales of winter, during which the gusts descend from the mountains above with hurricane violence. A good cable is therefore necessary from the port bow of the vessel across to the rocks on the north shore of the port, as an anchor in the shallow water would come  
10 home. A good anchor and ground tackle also must be laid well out to the north-eastward, in not less than 15 or 20 fathoms water, where it would be in firm holding ground, and with a steep incline of the bottom to drag against. The stern-fast should also be secured to the quarter of the vessel, so as to allow her to swing off to all N.W. or  
15 N.E. gales, as this would greatly relieve the strain.

**Water.**—There are several wells at the head of the port, but the water is slightly saline or mineral, yet not unwholesome, as the natives frequently can drink no other, and have even recommended it medicinally, as an alterative, and for producing an appetite. There is,  
20 however, good water to be procured when there is no swell, from under a high cliff about  $1\frac{1}{2}$  miles west of the port, where by simply digging a hole to the depth of a foot or two in the shingle beach under the precipice, a strong flow of water is met with, from which the vessels in the port always water when practicable.

- 25 *Plan of Sphakia anchorage on 2536a.*

**SPHAKIA** (Lat.  $35^{\circ} 12' N.$ , Long.  $24^{\circ} 09' E.$ ).—The coast town of Sphakia, the capital of a celebrated mountain district of Crete, is about 3 miles eastward of the port of Lutro, which is its harbour, and stands on the western side of Cape Vatalos, a sloping  
30 point  $3\frac{1}{2}$  miles eastward of Kavo Muros. In summer, the coasting craft generally lie under Sphakia, at the mouth of a small cove, or are hauled ashore there, preferring it to the shelter of Port Lutro, in consequence of the inconvenience of communicating between it and Lutro by land across the several intermediate gorges and ridges;  
35 owing to which, it takes nearly 4 hours to cover the ground, although only three-quarters of an hour by sea when fine.

In 1905 H.M.S. *Minerva* anchored in 15 fathoms sand, and good holding ground, with the west end of the village bearing  $5^{\circ}$  true, and Kavo Muros,  $265^{\circ}$  true.

- 40 Sphakia always enjoyed a certain amount of independence, and was formerly a town of some size, and possessed, previous to the Greek revolution, 15 square-rigged vessels, and a population of about 3,000, but it is now dwindled to a mere village of not more than 80 or 100 houses. See view, Port Lutro, on 217.

- 45 There is a sanitary station at Sphakia. See Quarantine regulations, page 22.

*General charts 2536a, 2836a.*

*Charts 2536a and 2836a. Var. 3° 20' W.*

**GAVDO ISLAND** (*Lat. 34° 50' N., Long. 24° 05' E.*).—This island is about 5½ miles in length, about 3 miles in average breadth, and 1,065 feet high; it is not very fertile, and contains a population of about 100 poor families, under the government of Sphakia. Gavdo is 20 miles southward of Cape Vatalos of Sphakia, and on its eastern side is a roadstead, where there is anchorage in from 10 to 20 fathoms water, on a bottom of sand and mud. There is anchorage also close off the south-eastern point of the island, to the eastward of Cape Tripiti, in 14 fathoms at 2 cables from shore, and this is preferable with northerly winds to the eastern roadstead, but not with westerly winds.

Cape Tripiti terminates the high cliffs forming the southern coast of Gavdo, and is remarkable for three natural arches perforated through its extremity, with a small valley on its east side. The north side of the island is low and shelving, and has shoal ground extending for 1½ to 3 cables off all its points. A reef, on which are two islets, extends for half a mile from the north point of the island, and there are also two detached rocks lying off the northern extreme; one nearly a mile distant, with less than 6 feet on it, the other with 14 feet water on it rather more than a mile from the shore, with deep water around them.

Gavdo is the *Clauda* of the ancients, and the *Gozo* of the Middle age and modern navigators of the Levant. It has been dreaded by the mariner for its supposed outlying dangers, but the south shore is quite free, being bold and precipitous. No other danger than the rocks above described exist around it; nevertheless, the natives have a tradition that a shoal was known to their ancestors, which tradition may have sprung from a biblical source, since the deep soundings around give no indication of a rising of the bottom, to lead to the supposition of a submerged bank or quicksand having ever existed anywhere near it as a danger.

The island may, therefore, be boldly approached except at its north extreme, and the shelter of its lee, or the anchorage its roadstead affords, may be taken advantage of during a south-west or westerly gale.

*Chart 2536a, Western part of Candia or Crete.*

**LIGHT.**—A light is shown, at an elevation of 1,149 feet above the sea, from a lighthouse situated on the western coast of Gavdo island, and bearing 290° true, 8 cables from the 1,065-feet summit.

**Gavdo Pulo**, nearly 4 miles to the north-westward of Gavdo, is narrow, and upwards of 1½ miles in length N.W. and S.E. It is 440 feet high, steep-to, has no danger around it, nor anchorage, and

*General chart 2836a*



*Chart 2536a, Western part of Candia or Crete. Var. 3° 20' W.*

is uninhabited; between it and the sunken rocks off the north end of Gavdo, the passage is clear of danger.

- COAST.**—The coast between Cape Vatalos and Kavo Melissa, which is the west point of Messara bay and 22 miles to the east-south-eastward, has several indentations and bays at the mouths of precipitous valleys, and picturesque gorges, each with a small streamlet of good water flowing out of them to the sea. Anchoring ground can be found off some of them, but that of the bays east and west of Franko Castelli and Plaka alone deserve notice, as being the most convenient, and also from having the best water. There is neither produce nor object of interest sufficient to invite a trader or traveller upon this part of the coast, except its picturesque features; moreover, the squalls which descend from the gorges with strong northerly gales, are very violent.

- Franko Castelli** (*Lat. 35° 10' N., Long. 24° 15' E.*), 5 miles eastward of Cape Vatalos, is a ruined Venetian fort, on a low point of the coast, off which there is a long ledge of rocks forming a sort of natural mole. The rocks enclose a small sheet of water, with from 2 to 3 fathoms water within. Coasting craft use it in the summer season, and there is a local tradition that the Venetians intended to convert it into a safe port for winter use also, had they retained possession of the island.

**Plaka bay** lies 8 miles to the eastward of Franko Castelli.

- There is a sanitary guardhouse at Plaka. *See Quarantine regulations, page 22.*

- MESSARA BAY** is formed between Kavo Melissa and Cape Littinos, about 14 miles to the south-eastward, and from the line joining these two capes the bay recedes nearly  $6\frac{1}{2}$  miles. From Kavo Melissa, the north shore of the bay trends eastward for 9 miles to the mouth of the Messara valley, near Dibaki village, and is the base of the lofty Psiloriti mountain, or ancient *Ida*, which, from this point of view, presents a long broad-backed summit, and not conical as from the north-western side of Crete. There is landing at Eremopoli on the north shore of the bay.

At Agia Triadha, near Dibaki, extensive tombs, and the remains of a palace, have been recently discovered, all of the Neolithic and Minoan periods.

- From near Dibaki village, the shore of the bay turns to the southward, and for 5 miles is low, with a clean sandy bottom off it, decreasing in depth gradually from 20 and 18 fathoms at one mile distant; the coast for a further 5 miles to Cape Littinos is formed of low white cliffs. *See view on chart 2536a.*

- Anchorage.**—There is anchorage in any part of the bay in the summer season.

*General chart 2836a.*

*Plan of Port Matala on 2536a. Var. 3° 20' W.*

**PORT MATALA** (*Lat. 34° 59' N., Long. 24° 46' E.*). — The coasting craft trading with the Messara district generally anchor in a small cove  $4\frac{1}{2}$  miles northward of Cape Littinos, there being a more level road from it than from Kalo Limniones to the eastward of that cape. It is called Port Matala, and, although sheltered from the northward, is open to westerly winds, during which the vessels are hauled ashore upon a good beach. This was one of the trading ports of Gortyna, recognised by the ruins existing there, and by its still retaining the ancient name of Metala or Matala, given to it by the ancient authors; the shore cliffs also are perforated with tombs, some of which are below the level of the sea, and show a subsequent depression of the coast as at Spinalonga and Cape Sidero.

The port is nearly 2 cables in length, by  $1\frac{1}{4}$  cables in breadth, but a bank stretches off the beach at its head for three-quarters of a cable; between the edge of this bank and the entrance, the depths are from 4 to 8 fathoms. There are two ruined houses close to the beach, and a landing place on the south side with steps cut in the rock. The cliffs on the south side of the port are about 42 feet, and those on the northern side about 150 feet high.

There are sanitary stations at Matala and at Agia Galines, to the northward. See Quarantine regulations, page 22.

**Anchorage.** — There is good anchorage off Port Matala in 14 fathoms, over fine sand, with the north entrance point bearing 100° true, distant 4 cables, the water shoaling gradually to the entrance.

**Landing.** — There is also a landing place on the north side of the point situated about two-thirds of a mile north of Port Matala, the road running up the face of the cliff at a steep incline.

*Chart 2536a, Western part of Candia or Crete.*

**Supplies.** — Water may be procured at Messara river (*Lat. 35° 04' N., Long. 24° 46' E.*), or at Galines bay, the outlet of the Amarion valley, which runs half across the island at the western base of Psiloriti or Mount Ida.

The Messara district produces a fine quality of wheat, and is capable of tenfold greater fertility and cultivation than at present. It is 25 miles long by 3 to 4 miles wide, dry in general, but with several rivulets intersecting it, and could be made the garden of Crete, as it no doubt was in ancient times, when Gortyna flourished as the capital of the island.

**WINDS.** — The swell from a sea breeze or westerly winds would, however, render communication with the shore of Messara bay often difficult, and the squalls from Psiloriti with northerly gales strike the bay with great violence. These are very frequent between the months of June and October, known by the native sailors of the Levant as the

*General charts 2536a, 2836a.*

*Chart 2536a, Western part of Candia or Crete. Var. 3° 20' W.*

*Meltem* gale, their coming or continuance being always indicated by a fleecy bank of white clouds, which then envelopes the summit of Psiloriti and some of the neighbouring peaks.

- 5 In the winter these northerly gales are more violent, and the squalls more to be dreaded in consequence, and their effect upon the craft of St. Paul's day, which were only adapted for summer navigation, may thus be easily comprehended; hence the disabled condition of his ship upon encountering one of these gales after leaving Fair Havens (Kalo  
10 Limniones, *see* page 63), with the intention of wintering at Phœnice, about 40 miles to the westward of it.

- The stormy wind, called Euroclydon in the Acts of the Apostles, and the *Meltem*\* of the modern Greek navigator, seem therefore to be identical; for to the Levantine sailor, the *Meltem* is a tempest always  
15 to be guarded against, especially from its squalls when passing under any high land, which are often of great force. It is thus possible that its character, and not so much its direction, is meant by the word *Euroclydon* in the description of St. Paul's voyage by St. Luke; for in the Black sea and the northern parts of the archipelago, the  
20 *Meltem* or northern gales are invariably N.N.E., but in the southern parts and Cretan seas they are from N.N.W., whilst in Egypt and Syria they are frequently between N.W. and N.N.W.

- Kalo Limniones is a more tranquil anchorage with these gales than Messara bay, as in the former, a moderate and steady breeze is often  
25 blowing, whilst in Messara bay it is a strong gale, especially in the beginning of the day, just as St. Paul experienced in crossing it, and as was also experienced in H.M.S. *Spitfire* on one occasion when leaving Kalo Limniones for the western part of Crete; this circumstance, and experience first threw light on the true meaning and character of  
30 the Euroclydon of St. Luke.

- The PAXIMADIA** (biscuits) are two islets, lying before Messara bay. They are high, attaining an elevation of 1,160 feet, and together 2 miles in length east and west; surrounded by deep water, they present no difficulty to the navigation of the bay, but as there is  
35 no anchorage near them, they afford no shelter for an embayed vessel. They lie  $5\frac{1}{2}$  miles southward of Kavo Melissa, the nearest part of Crete north of them, and 8 miles north-westward of Cape Littinos.

- CAPE LITTINOS** (*Lat. 34° 55' N., Long. 24° 45' E.*), the southern extremity of the wide bay of Messara or Dibaki, and the  
40 western extremity of the Kophino mountains, is a bold and well-defined headland, distinguished by a high wedge-shaped cliff, the cape forming the acute angle of the wedge.

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\* The Turkish word *Meltem* is more usually applied to summer gales; and in the Bosphorus it bears a special name, according to the produce of the season, as Kabak Meltemi, Kirax Meltemi or Cherry Meltem.

*Plan of Kalo Limniones on 2724. Var. 3° 10' W.*

**KALO LIMNIONES** (the Fair Havens, from whence St. Paul sailed previous to his shipwreck at Melita) is a small bay  $3\frac{1}{2}$  miles eastward of Cape Littinos. It is open to the eastward, but partially sheltered by two islets, St. Paul and Megalo nisi, which lie south-east and south-west of it. It is not recommended as an anchorage to winter in; although a vessel well found in anchors and chains, as in the present day, would have a better chance than in the days of St. Paul, by securing with stern-fasts to the shore, under the lee of, or on the northern side of the islet of St. Paul. With an anchor out to the N.E., in 7 fathoms water, and another to the N.N.W. in 8 fathoms, where the bottom is sandy mud and weed, and fair holding ground, she would be under the lee and well sheltered. Although the swell rolling round the point of the island during a south-east or southerly gale would be inconvenient, the vessel would not be endangered so long as the shore-fast held.

In 1905 anchorage was found in 9 fathoms one cable,  $355^\circ$  true, from the north-east point of St. Paul islet.

There is also anchorage in the roadstead with all westerly or northerly winds, in from 10 to 20 fathoms, between St. Paul islet and Mavro nisi, the steep black rock or islet, 36 feet high, in the middle of the bay; but between Mavro nisi and Trapho (lying close to the shore 7 cables east-north-eastward of St. Paul islet), there is a reef extending off  $1\frac{1}{4}$  cables from the base of a remarkable triangular cliff; which cliff, therefore, must not be approached too closely. On the shore within Trapho islet, was the ancient town of *Lasea* or *Thalassa*.

The narrow passage between the western end of St. Paul islet and the coast, is deep and clear; but the passage between Megalo nisi (196 feet high), and the shore, is obstructed by a shoal of  $2\frac{1}{4}$  fathoms water, lying nearly in mid-channel. The little islet of Papado Plaka, about a cable in length, lies  $4\frac{1}{2}$  cables west-south-westward of Megalo nisi, and at about three-quarters of a cable north of it, is a 5-fathoms patch. It should not be approached too closely.

**Water.**—On the west side of the triangular cliff alluded to, is a valley with a dry watercourse; but by sinking a well in the beach, some 4 or 5 feet deep, and not more than 25 or 30 feet from the sea, a good supply of excellent water can be obtained. There is no other water in the bay, and the only inhabitants here some years ago were a few shepherds and the guards.

There is a sanitary guardhouse at Kalo Limniones. See Quarantine regulations, page 22.

*Chart 2536b, Eastern part of Candia or Crete.*

**CAPE KEPHALA** (Lat.  $34^\circ 56'$  N., Long.  $24^\circ 56'$  E.) (ancient Leon prom.), is a conspicuous headland,  $9\frac{1}{4}$  miles eastward of Cape

*General charts 2536a, 2836a.*

*Chart 2536b, Eastern part of Candia or Crete. Var. 3° 10' W.*

Littinos, and in certain views bears such a resemblance to a crouched lion as to merit the ancient appellation.

The ruins of *Lebena*, once the principal seaport town of Gortyna, are over a small bay, immediately on the eastern side of this headland, off which there is an anchorage in from 10 to 12 fathoms. The ancients hauled their vessels ashore under the town. It was celebrated for its temple to Esculapius. The invalid citizen of Gortyna no doubt found relief there from inhaling the pure sea air, and hence the temple.

**Coast.**—From Cape Kephala the coast trends eastward  $2\frac{1}{4}$  miles to Cape Trekala, thence a further  $6\frac{1}{4}$  miles to Cape Martello, after which it takes a general direction  $82^\circ$  true for 32 miles to Hierápetra.

**Mount Kophino.**—The highest point of the Kophino mountains, situated  $1\frac{1}{3}$  miles from the coast and 8 miles eastward of Cape Kephala, terminates in a remarkable horn or pointed crag, 3,750 feet above the level of the sea, which, being seen from a great distance, forms a good landmark for recognising this part of the coast. See view of the south coast, 4 miles south of Sudsuro bay, on chart 2536b.



*Cape Kephala.*

*Cape Trekala.*

*Mount Kophino.*

View from 4 miles south of Sudsuro bay.

**SUDSURO BAY** (*Lat.  $34^\circ 59' N.$ , Long.  $25^\circ 18' E.$* ), distant about  $18\frac{1}{2}$  miles eastward of Cape Kephala, affords anchorage in from 7 to 10 fathoms water, at a quarter of a mile south of the shingle point, in front of the rocky gorge through which issues the rivulet that gives its name to the locality. This is an excellent watering place, and abundance of firewood may be also cut along the coast to the eastward of the Anapodari potamo, a much larger stream than the Sudsuro, and which falls into the sea  $1\frac{1}{2}$  miles eastward of it, but not so sheltered for watering. The Anapodari flows from out of the great Messaria plain, which is the finest district of Crete, and, if cultivated to the extent of its capabilities, would almost meet the annual requirement of grain for the island.

As the land over Sudsuro is low in comparison to the mountains on either side, and forms a sort of gap between the Lasethe mountains to the eastward, which are 7,100 feet high, and the Kophino mountains, 3,750 feet high, which extend immediately over the coast to the westward of Sudsuro, the bay is subject to strong winds during the northerly gales of the summer season, which escape across the island

*General charts 2536a, 2836a, 2606.*

*Chart 2536b, Eastern part of Candia or Crete. Var. 3° W.*

through this gap; the squalls, however, are not so violent as to render the anchorage as unsafe or even inconvenient, as under the Kophino mountains to the westward, where, the wind being less steady, the gusts are more violent in consequence. 5

Under the Lasethe mountains, on the contrary, it is generally calm with northerly winds, the calm extending to a distance of 5 or 6 miles from the land, sometimes more, beyond which the breeze is steady; local calms or squalls consequently embarrass the navigation near the land. 10

**Keraton bay**,  $4\frac{1}{2}$  miles eastward of Sudsuro bay, has a more spacious anchorage ground on account of its bank extending farther off the coast, but is not so well sheltered as Sudsuro from the westerly winds and swell. The large town and fertile district of Viano will be seen over the bay; it is the chief town of the district of Arkadia or Rhizo. 15

**KALOYERI REEFS** (*Lat. 35° 00' N., Long. 25° 39' E.*), lying 36 miles eastward of Cape Kephala and nearly  $4\frac{1}{2}$  miles westward of Hierápetra, extend nearly a mile from shore at the point which terminates the eastern spur of the Lasethe mountains, or from the end of the long olive grove extending along the coast westward of Hierápetra. The reefs have less than 6 feet water on them, and 10 fathoms close to; they should be given a wide berth. 20

**GAIDARO-NISI** (*Lat. 34° 52' N., Long. 25° 43' E.*).—At  $7\frac{1}{4}$  miles, 169° true, from the Kaloyeri reefs is the west point of the low island of Gaidaro-nisi, off the eastern end of which is a small conical-shaped islet named Mikro-nisi, higher than the large island, with only a boat passage between them. The island is  $2\frac{3}{4}$  miles in length, three-quarters of a mile wide, and is surrounded by a bank of 30 to 50 fathoms. 25 30

**Anchorage.**—A vessel might run for, and anchor northward of the centre of Gaidaro-nisi, in the event of being caught too near the land in a south-east or southerly gale, and unable to gain an offing; but she should approach by the lead, and anchor in not less than 10 or 12 fathoms water, and a good half-mile from the shore, as shallow and rocky ground extends more than 3 cables off, but the bottom is clean white sand beyond. The vessel should, however, be prepared to weigh as soon as the wind veers to West and N.W., as it will soon do; so as not to be caught when the gale has settled in the North, with the island under her lee. 35 40

**The best anchorage** in a southerly gale is in about 8 fathoms at 4 cables, 41° true, from the north-eastern point of Gaidaro-nisi, when the centre of the small islet Mikro-nisi will bear about 158° true. The bottom is fine sand, but holds well if sufficient cable is veered;

*General charts 2836a, 2606.*

*Chart 2536b, Eastern part of Candia or Crete. Var. 3° W.*

and in this position, if the wind shifts to N.W. or North, it would be practicable for a sailing vessel to put to sea.

*Plan of Hierápetra on 2715.*

- 5 **HIERÁPETRA.**—At 40½ miles eastward of Cape Kephala and 18 miles westward of Cape Guderú, is the walled town of Girápetra, or, as more generally called by the natives, Hierápetra, at the commencement of a small plain that extends along the southern shore of the isthmus of Sitia. It was the site of the
- 10 ancient city of *Hierapytna*, which attained some size and importance in the time of the Romans, and had an artificial port formed by two moles from rude blocks of stone. But the port or
- ports (for it seems to have had an inner as well as an outer one) are for the most part filled up, and the moles are partially ruined also.
- 15 The modern town stands on the site of the inner and choked-up part of the port, and is in consequence low, swampy, and very sickly during the summer months. A loop-holed wall, with towers, built by the Turks, encloses it on the land side, and a small Venetian fort, standing on the extremity of the point, commands its sea face. Hierápetra
- 20 contains about 2,000 inhabitants, and has some little trade in oil, the produce of the plain lying to the north and north-westward of the town. The bay on its eastern side, affords anchorage in 5 to 6 fathoms on a clear sandy bottom, during northerly and north-westerly winds, but it is open and unsafe with southerly winds.



*Kaloyeri point.*

*Hierápetra.*

*Cape Guderú*

View of coast of Crete from 5 miles north-west of Gaidaro-nisi.

- 25 **LIGHT** (*Lat. 35° 00' N., Long. 25° 45' E.*).—A light, elevated 30 feet above the sea, is shown from a red lantern situated on the south-eastern corner of the Custom house at Hierápetra.

There is a sanitary station at Hierápetra. *See Quarantine regulations, page 22.*

- 30 *Chart 2536b, Eastern part of Candia or Crete.*

- Coast.**—From Hierápetra the coast trends to the eastward for 18 miles to Cape Guderú on the northern side of the Kupho channel; at Prassu nisia islet, one mile east of Cape Guderú, the coast turns to the east-north-eastward for about 6¼ miles to the Kavallos islands and
- 35 bay. *See page 53, under the Kavallos, for caution respecting winds on this part of the coast.*

- Photia-nisi** is a small islet surrounded by rocks and 30 feet high, situated near the coast, 6¾ miles eastward of Hierápetra. North-north-east of the islet is a valley with good water; firewood may also be cut
- 40 on the sides of the valley. The coast all along this part of Crete is bordered by shallow water and rocks.

*General charts 2536b, 2836a, 2860c.*

*Chart 2536b, Eastern part of Candia or Crete. Var. 2° 50' W.*

**Cape Guderú** (*Lat. 35° 00' N., Long. 26° 07' E.*).—From Photia-nisi the coast trends to the northward of east for  $5\frac{1}{2}$  miles to Agio Irini, then turns to the east-south-eastward for  $6\frac{1}{4}$  miles to Cape Guderú (ancient *Erythræum* prom.) on the north side of the Kupho channel, forming the open bays of Kalonero and Makri-yalo; off the points which divide these bays, there are some shoal patches at from 5 to 6 cables from the shore, which should not be approached. 5

On the east bank of the river flowing into the sea on the north shore of Makri-yalo bay, and about 50 yards from its mouth, is a large monastery surrounded by a high white wall. 10

There is a sanitary guardhouse at Makri-yalo. *See* Quarantine regulations, page 22.

**KUPHO NISI** (*Lat. 34° 56' N., Long. 26° 09' E.*), the largest of a group of islets, is nearly 2 miles in extent, and comparatively low, its highest point reaching an elevation of only 212 feet. It is less than 3 miles from the eastern part of Cape Guderú, in Crete, and is otherwise remarkable by its white cliffy coast, as this part of the mainland of Crete has no white cliffs. 15

**Sponge reefs.**—Two islets lie off the northern extreme of Kupho nisi, namely, Makrolo, 40 feet high, and Strongilo, 60 feet high; extending for a distance of nearly half a mile northward of them and nearly  $1\frac{1}{4}$  miles from the north point of Kupho nisi, are three detached rocks called Sponge reefs, only a few feet under water. 20

**KUPHO CHANNEL.**—Between Sponge reefs and Prassu nisia (a small islet 12 feet high 2 cables from the Cretan shore and about a mile eastward of the high steep headland of Cape Guderú) is a clear passage  $1\frac{1}{2}$  miles wide, called Kupho channel. 25

About one-third of a mile westward of Prassu nisia, and about 2 cables from the shore, is a rock awash. 30

**Caution.**—It is not advisable for a sailing vessel to anchor northward of Kupho nisi during a southerly gale, as the wind often shifts so suddenly to the northward that she might find it difficult to get away clear of the shoals lying near the group after it has shifted, or be in danger of dragging her anchors during the gusts which would then be experienced. 35

**Kumeleè islet**, with a reef on its southern side, lies near the shore about  $4\frac{1}{2}$  miles east-north-eastward of Prassu nisia, and about  $1\frac{1}{2}$  miles farther in the same direction is the westernmost Kavallos islet. *See* page 53. 40

**East coast.**—For a description of the eastern coast of Crete from Cape Sidero to Kavallos bay, *see* pages 50 to 53.

*General charts 2836a, 2606.*



## CHAPTER III.

SOUTH-EAST COAST OF GREECE FROM CAPE MATAPAN TO  
SPETSAL ISLAND AND CAPE MILIANOS, WITH THE ISLANDS  
OF KITHERA AND ANTIKITHERA.

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VARIATION decreasing about  $8\frac{3}{4}'$  annually.

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*Chart 1685, Venetico I. to Spezzia I. Var.  $3^{\circ} 50'$  W.*

**MANI PENINSULA.**—The most conspicuous of the mountains from north to south on the Mani peninsula, which forms the western side of the Kolpos Lakonikos, are Mount Taygetos (Agios  
5 Elias or Makryno), ancient *Taygetum*, 7,897 feet high, in lat.  $36^{\circ} 56' N.$ , its summit being nearly always covered with snow; Mount Mavro, 6,274 feet high,  $3\frac{1}{2}$  miles to the southward; Mount Kubenova, 4,827 feet high; Sanghia mountain, 3,777 feet high; Mount Miniátika, 3,530 feet high; and Mount Kakòvuni, 3,000 feet high; the  
10 latter being  $8\frac{1}{2}$  miles to the northward of Cape Matapan.

In clear weather the lofty mountains may be sighted at a great distance; Mount Taygetos is, however, frequently enveloped in clouds, excepting during the dry summer months. With south-easterly winds, the mountains are usually covered with clouds.

15 *Chart 3372, Kolpos Lakonikos.*

**CAPE MATAPAN (TENARON)** (Lat.  $36^{\circ} 23' N.$ , Long.  $22^{\circ} 29' E.$ ), ancient *Tænarium*,\* is the termination of a peninsula 3 miles in length, joined to that of Mani on the north by an isthmus only 4 cables in breadth, which separates the little ports of  
20 Marmari and Kaio; this peninsula consists almost entirely of dark grey marble. For  $1\frac{3}{4}$  miles from the extremity of the cape, the land rises gradually from south to north to a height of 1,025 feet at Matapan mountain and then falls abruptly towards the isthmus; therefore, when seen from eastward or westward at a distance of 12 miles  
25 or more, it appears as a triangular or wedge-shaped island. (*See views opposite.*) When the distance is so great that the high land of the cape is below the horizon, Mount Miniátika, which is 3,530 feet

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\* This promontory was formerly celebrated as a safe refuge for fugitive criminals. Near Kisternes point, north-eastward of the cape, are the ruins of a temple of Neptune, and in the woods surrounding it is a cavern which was supposed to be one of the entrances to the infernal regions; other legends are also connected with it.

*General charts 1685, 2836a, 1800.*



*Cape Matapan*  
*bearing 38° true 22 miles.*  
Cape Matapan from the west-south-westward.



*C. Matapan,*  
*bearing 267° true,*  
*6 miles.*  
Cape Matapan from the eastward.



*Chart 3372, Kolpos Lakonikos. Var. 3° 50' W.*

high, flat-topped, and  $10\frac{3}{4}$  miles northward of the cape, will probably be seen, and its southern slope must not be mistaken for the high land of the cape, which will become visible on a nearer approach.

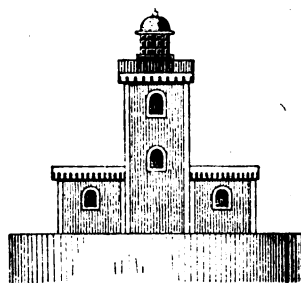
When immediately southward of the cape, its extremity cannot be recognised unless the lighthouse can be distinguished, on account of the high land behind it, but on the west are the steep cliffs of Cape Grosso forming regular terraces, and to the north-east Kisternes hill, 344 feet high, rising immediately above Kisternes point, is conspicuous.

Cape Matapan is steep-to and clear of danger, and may be approached within a short distance, there being 80 fathoms a quarter of a mile from the point. The current in its vicinity generally sets westward nearly a knot an hour. When under sail, with strong northerly winds and near the coast, it is necessary to be prepared for the baffling and heavy squalls which blow from the high land.

In fine weather, landing may be effected on the eastern side of the cape, immediately under the lighthouse.

**LIGHT** (*Lat. 36° 23' N., Long. 22° 29' E.*).—A light is shown from a masonry tower, near the extreme of Cape Matapan, at an elevation of 134 feet above the sea.

**Katergaki rock**, 6 feet high, lies close to the shore, 4 cables to the north-north-eastward of Cape Matapan.



Cape Matapan lighthouse.

**KOLPOS (GULF) LAKONIKOS.**—The base of the chain of mountains extending southward from Mount Taygetos, together with the peninsula of Mani, form the western shore of this gulf, and the base of the chain forming the peninsula of Elos constitutes the eastern shore.

Cape Agia Maria, the south-western point of the island of Elaphonisos, bears from Cape Matapan 78° true; and the entrance to the gulf between the two is 22 miles wide; from thence, the gulf extends northward about the same distance, narrowing to about 8 miles off the Helos plain at its head.

The western shore of the gulf is rugged and irregular. The land at the head consists of alluvial soil brought down by the Iri river (ancient *Eurotas*), and the lofty mountains of Arcadia are seen at the head of the valley. The peninsula of Elos, with its arid and sterile mountains, on the eastern side, fitly correspond with those of Mani on the west. At the north-eastern angle of the gulf are the heights of Mount

*General charts 1685, 2836a, 1800,*

*Chart 3372, Kolpos Lakonikos. Var. 3° 50' W.*

- Kurkula, 2,990 feet high and about 2 miles from the shore, the chain continuing southward to Mount Krithina, 2,571 feet above the sea, and terminating 4 miles further south-eastward in Cape Malea or Agios Angelo, as it is indifferently called. The principal port in the gulf is Githion, in the north-western corner. There are no outlying dangers, the water is deep, and the winds are similar to those in the Gulf of Kalamata. See *Mediterranean Pilot*, Vol. III.

- Winds and weather.**—Fair weather was generally experienced during the survey of this gulf by H.M.S. *Goldfinch*, between the months of April and August, 1902, inclusive. The wind was usually from the westward and south-westward during the early part of the summer; setting in daily at about 11 a.m. with considerable strength, especially on the Mani peninsula, covering the mountain tops with clouds, and usually moderating at night; but occasionally continuing without a break for 3 or 4 days, reaching home to the eastern shore and causing a considerable sea. These winds are generally accompanied by a haze.

- Easterly and north-easterly winds seldom prevailed on the western side, but frequently occurred during the day on the eastern shore of the gulf. On one occasion, in the middle of April, a strong and steady gale from the north-eastward, lasting 36 hours, accompanied by thick haze, set in without warning from the barometer, which remained high and steady throughout.

- Southerly winds never blew with any violence, and seldom reached the head of the gulf. Their presence in the offing was apparent from the long swell setting in from that direction.

- Light northerly winds occurred at rare intervals, refreshing in their coolness and accompanied by a very clear atmosphere, rendering the distant lofty mountains clearly visible. Rain only fell on three occasions in a period of 5 months. The almost entire absence of clouds throughout the day and night was a marked feature, which, as mid-summer approached, caused this treeless and stony coast to become much dried up and superheated. Caution is necessary, therefore, in exposing oneself to the sun; and the use of a sun helmet is always necessary during the summer months.

Fogs seldom occurred, and did not last long. As a rule they only formed in the morning calms, before the heat of the day commenced.

*Plan of Port Asomato on chart 1685.*

- Port Asomato** (*Lat. 36° 24' N., Long. 22° 29' E.*).—Kisternes point, a mile and a quarter north-eastward of Cape Matapan, is a well-defined point separating the two little bays known as Ports Asomato and Vathy. Kisternes hill, 344 feet high, is a sharp rounded summit near the point. On it once stood a fine temple dedicated to Neptune.

*General charts 3372, 1685, 2836a, 1800.*

*Plan of Port Asomato on chart 1685. Var. 3° 50' W.*

The entrance to Port Asomato is less than a mile northward of Cape Matapan; it is about 2 cables wide at the entrance and recedes northward 3 cables, having three little bights at its head. The depths are from 10 to 17 fathoms in the middle, with 3 or 4 fathoms close to the shore on either side, but towards the head it shoals more gradually. It affords good shelter from all winds except those from between South and S.E., and the hills around this port not being so high as those about Port Vathy, it is not subject to such heavy squalls as the latter. There is a small village about a third of a mile from the head of the bay, and a marble quarry beyond it; the marble blocks are transported down to the port on rough timber tramways, and there embarked. There is a well on the western side of the middle bight at the head of the port (*Lat. 36° 24' N., Long. 22° 29' E.*).

*Plan of Port Vathy on chart 1685.*

**Port Vathy** is inferior to Port Asomato, for, though well protected from seaward by Kisternes point, it is very narrow, the water deep, and it is subject to heavy squalls from all directions. The north entrance point is 4 cables north-westward of Kisternes point, and abreast the former the entrance is  $1\frac{3}{4}$  cables wide, the port thence extending north-westward  $3\frac{1}{2}$  cables, with two small bights at the head. The anchorage in 11 fathoms at the head of the harbour is fair, but as it is only about 130 yards wide, a vessel of any size must either moor very taut, or head and stern.

*Plan of Port Kaio on 3342.*

**Port Kaio** (ancient *Psamatus*), 3 miles northward of Cape Matapan, is open to the eastward, and  $2\frac{1}{2}$  cables wide at the entrance. The head of the port is separated from Port Marmari, on the western side of Matapan peninsula, by the narrow isthmus before mentioned, and on a hill on the western side of the port is a conspicuous old tower or castle 445 feet high. North point, on the northern side of the entrance, is broad and of a reddish colour, and the port may be known at a distance by the break in the land at the isthmus. Within the entrance it extends  $4\frac{1}{4}$  cables westward and is  $6\frac{1}{2}$  cables long north and south.

This port is superior to either Ports Asomato or Vathy, although the anchorage is much confined by the extensive Harbour shoal.

**Harbour shoal** is an extensive rocky shoal about 300 yards long in a south-westerly direction and less than 100 yards broad, with general depths of 7 to 9 fathoms and deep water all round. It lies in the centre of the port, and on it are two rocky heads.

The outer of these, with a depth of 4 fathoms, is in the way of ships entering the port, and lies 316° true, distant 320 yards from Entrance point, the south point.

*General charts 3372, 1685, 2836a, 1800.*

*Plan of Port Kaio on 3342. Var. 3° 50' W.*

The inner rock, with a depth of only 2 fathoms, lies 195 yards south-westward of the outer rock, and 286° true, 390 yards from Entrance point. These shoal heads, which are steep-to, can generally be distinguished in day time by the appearance of the water over them.

The extremity of the land to the southward, seen open eastward of Entrance point, bearing 150° true, leads eastward of the Harbour shoal.

**Light** (*Lat. 36° 25' N., Long. 22° 29' E.*).—A light is occasionally shown from Entrance point when a steamer is expected at night.

**Directions.**—No special directions can be given for the avoidance of these dangers when using the port; the chart should serve as the best guide.

If intending to anchor in the south-western part of the bay, when coming from the southward, Entrance point can be rounded at a distance of about half a cable, anchoring when the house on the beach, in the eastern corner of the sandy bay, forming the southern bight, becomes visible.

**Anchorage.**—The best anchorage is in the southern bight of the port in about 17 fathoms, protected from easterly winds, where it would be necessary for all but a small ship to moor; anchorage can also be found northward of the Harbour shoal, where the water is deeper.

**Communication.**—It is a regular port of call for the weekly coasting steamers to and from the Piræus; there is a small coasting trade here.

**Supplies.**—No supplies can be obtained here. A few houses are scattered around the shores of the bay, the most conspicuous being the buildings of a former monastery on the northern shore.

The village of Port Kaio, which is somewhat hidden from the anchorage, is situated on a hill 500 feet high to the southward. The inhabitants of this wild mountainous district obtain a scanty livelihood from their flocks, and a little corn and fruit which they are able to cultivate in carefully-prepared terraces on the rocky mountain slopes.

*Chart 3372, Kolpos Lakonikos.*

**COAST.**—The coast northward of Port Kaio is high and rugged to Demaristika point, the mountains descending abruptly to the shore line, which is steep-to, depths of a hundred fathoms being reached within 2 cables off it.

There is a small cove fit only for small craft, about 1½ miles north of Port Kaio.

At Demaristika point the coast trends to the north-north-westward

*General charts 3372, 1685, 2836a, 1800.*

*Chart 3372, Kolpos Lakonikos. Var. 3° 50' W.*

for  $2\frac{1}{2}$  miles, and then northward to Kolokithia bay, 11 miles from Port Kaio, with the same characteristics.

The mountain ranges of Kakòvuni and Sanghia, 2 miles inland, are here plainly seen, as also the scattered villages perched on their lower slopes with their many towers, a common feature of all the houses on the western side of the gulf. 5

There are a few indentations used only by coasters, deep water being found close inshore. Port Nimphi, formed by a narrow cleft,  $4\frac{1}{2}$  miles northward of Demaristika point, may be considered the most important. 10

**Kolokithia bay** is 11 miles northward of Port Kaio and  $1\frac{1}{2}$  miles wide; it is open to the south-eastward, falls back between high land, a mile northward, and, being much exposed, should not be resorted to unless in case of necessity. A bluff promontory, projecting in a south-easterly direction, forms its eastern side, and the water in the centre of the bay is deep. The southern termination of the promontory takes the name of the bay, and about 3 cables south-south-eastward of it is a rocky shoal with 4 fathoms water. It is not a good anchorage, being exposed and surrounded by high mountains, from which brief squalls frequently descend. The best anchorage is in the north-eastern bight, with the extremity of the promontory of land in the centre of the bay, bearing  $274^\circ$  true, distant  $3\frac{1}{2}$  cables, the squalls from the Sanghia mountains to the westward being less severely felt here. 15 20

The little town of Kotronas is in the north-eastern angle of Kolokithia bay. 25

During the summer months the sea breeze, from the westward, generally sets in by 11 a.m., and lasts till past sunset; its advent is frequently made known by the mountain tops becoming covered with clouds. 30

There are several villages here and also up the valley to the north-westward, formed by a break in the mountain range, which leads to the Pass of Dhikora.

**Caution.**—The squalls down the mountain slopes, all along the eastern side of the Mani peninsula, are especially severe, rendering it dangerous for boats. 35

*Plan 3351, Port Skutari.*

**PORT SKUTARI** (*Lat.  $36^\circ 40'$  N., Long.  $22^\circ 30'$  E.*), northward of Kolokithia bay, and separated from it by the bluff reddish promontory just mentioned, which terminates eastward in Cape Stavri, affords the best anchorage in the gulf. The entrance is open to the south-east and about  $1\frac{1}{4}$  miles wide; thence the bay recedes north-westward more than 2 miles to the head, where there is a sandy beach. It is well sheltered from all winds except those from south-east, to 40

*General charts 3372, 1685, 2836a, 1800.*



*Plan 3351, Port Skutari. Var. 3° 50' W.*

which, however, it is entirely open, and, as the bottom is mud, it is considered a secure anchorage.

- Landmarks.** — Conspicuous objects are, Skutari chapel, with  
 5 white dome, on a hill 252 feet high, at the head of the port; Refuge bluff, 52 feet high, on the south-western side; Stavri hill, 607 feet high, above Cape Stavri; and Rounding point, which rises to 390 feet, on the north-east side of the entrance.

- Cape Pagania is the south-eastern extreme of the promontory forming the north-eastern side of Port Skutari, which promontory is a nearly flat table land, 520 feet high; the cape itself is round, bold, and 393 feet high. Off the entrance to the port, between the two capes, there are 60 fathoms water, which decreases to 20 fathoms at three-quarters of a mile from its head, and at a quarter of a mile from  
 15 the beach there are 7 fathoms, mud.

The anchorage affording the best shelter is in the north-west corner, in 11 fathoms, with Refuge bluff, bearing 190° true, distant 6 cables, and the chapel on Skutari hill 322° true. Squalls from the high mountain slopes from the westward are less severely felt here.

- Pagania rock**, with 5 fathoms least water, and 6 to 9 fathoms round it, lies on a rocky ledge which extends in a south-south-easterly direction for 2 cables from Cape Pagania. When coming from the northward the cape should not be rounded nearer than half a mile.

- Skutari town** is on the slope of a hill at the head of the port.  
 25 There is no water to be obtained. The country of Mani, inland, though rugged, grows sufficient barley and beans to support its inhabitants, and silk is an article of export.

*Chart 3372, Kolpos Lakonikos.*

- Coast.**—From Cape Pagania, the coast trends 1½ miles in a northerly direction to Cape Kremidara, and then recedes to the westward, forming a semi-circular bay 4 miles wide. This bay has an irregular coast line, and affords no shelter. Temporary anchorage in 13 or 14 fathoms may be had at about one-third of a mile from the beach in two indentations, each a mile wide, called South and Vathi  
 35 bays, which are separated by a steep point, over which is a conspicuous tower, 350 feet high. The bottom slopes steeply. A road through a deep and tortuous gully in the mountains leads to the town of Tsimova, near Port Limeni, in the Gulf of Kalamata.

- Mavrovuni point** (*Lat. 36° 43' N., Long. 22° 34' E.*), sometimes called Monte Nero, is steep-to and may be approached within a quarter of a mile. Off its southern extremity is a rock 2 feet high, almost connected to the shore, and on which the sea nearly always

*General charts 3372, 1685, 2836a, 1800,*

*Chart 3372, Kolpos Lakonikos. Var. 3° 50' W.*

breaks. The village of Mavrovuni, on rising ground above the point, is conspicuous from all directions.

*Plan of Githion on 3342.*

**GITHION**, the port of Sparta, stands on the coast at the foot of a hill 6 miles northward of Cape Paganía; it contained in 1902, 5,000 inhabitants, and is the principal seaport of the district, of which Sparta, about 25 miles distant to the northward, is the capital. It is sheltered from southerly winds and sea by Cranæ islet (Marathonisi), about a quarter of a mile in length east and west, which is connected by a causeway with the shore, nearly a cable distant; on the islet is a small church, built in the form of an ancient temple.

On a hill northward of the present town are vestiges of the ancient town, and about  $1\frac{1}{2}$  miles to the northward, on a hill near the shore, are the ruins of the castle of Kaki Skala.

**Landmarks.**—The following objects are conspicuous:—The lighthouse and turret on Cranæ islet; the chapel on Githion hill, 549 feet high; a chapel with white dome at the north-west end of the town, close to the road; the Prefect's house and flagstaff, on the north side of the town, close to the sea; the mill,  $1\frac{1}{4}$  cables north of the flagstaff, and various chimneys.

**LIGHTS** (Lat.  $36^{\circ} 45' N.$ , Long.  $22^{\circ} 34' E.$ ).—A light is shown at an elevation of 87 feet above the sea, from an octagonal white lighthouse, 73 feet high, on the east end of Cranæ islet.

A light is also shown from an iron column on the jetty head at Githion.

**Anchorage.**—The best anchorage is in about 17 fathoms, about  $2\frac{3}{4}$  cables northward of Cranæ islet, with Githion lighthouse bearing  $161^{\circ}$  true, and off the northern end of the mole head forming the inner harbour, alongside which small coasters unload. Small vessels may anchor closer to Cranæ islet.

Easterly winds cause a nasty sea in the roadstead. The water deepens suddenly off the coast bank, and attention to this is necessary. Cranæ islet may be rounded closely.

*Charts 3342, 3372.*

**Directions.**—Githion being in the north-western part of the Kolpos Lakonikos, a vessel bound to that anchorage should be guided

*General charts 3372, 1685, 2836a, 1800.*



Githion lighthouse.

*Charts 3342, 3372. Var. 3° 50' W.*

by the truncated peak of Xyli, conspicuous on the eastern side of the gulf; whilst the two promontories of Capes Stavri and Paganía will be recognised on the western side, the former being the higher of the two; farther northward, Mavrovuni point, a mile southward of the town, and which has on it a village, will appear of a reddish colour. Cranæ islet should be given a berth of one cable in passing, and a vessel should then anchor as already directed. In approaching the anchorage and the coast northward of it, do not stand close in without attention to the lead, on account of the shallow coast bank, which, abreast of the anchorage, extends  $1\frac{3}{4}$  cables from the shore. When coming from Elaphonisos channel, Mount Taygetos is nearly in line over the anchorage.

**Trade.**—The imports consist mainly of grain, cloths, and cotton stuffs, building materials and timber, the approximate value of the imports being about £50,000.

**Communication.**—There is communication by steamer about three times a week between Githion and Athens, Patras, and certain intermediate ports; and there is telegraphic communication with the European system.

Mails arrive daily from Athens and Europe, overland *via* Sparta.

**Supplies** of fresh provisions can be obtained here with a little notice beforehand, and fresh water suitable for boilers only, from a stream running into the sea three-quarters of a mile northward of the town between a break in the earth cliffs. Fruit is plentiful in the season.

*Chart 3372, Kolpos Lakonikos.*

**Coast.**—The coast northward of Githion trends about  $3\frac{1}{4}$  miles to the north-eastward, past the cliffy point  $1\frac{1}{2}$  miles from the town, above which are the ruins of the fort of Kaki Skala.

**Trinisi** are three small black islets or rocks,  $2\frac{1}{2}$  miles north-eastward of Githion; the outer islet lies 3 cables from the shore, with which and with each other they are connected by shallow water, sheltering an anchorage inshore of them very useful to coasting vessels. On the cliff north-eastward of the islets is a conspicuous tower.

**Iri river** (ancient *Eurotas*) (*Lat. 36° 48' N., Long. 22° 40' E.*).—From near Trinisi, the low marshy shore forming the head of the Kolpos Lakonikos trends eastward 8 miles to the base of Mount Kurkula. The river Iri runs through the valley into the sea by several mouths, the principal being about 3 miles eastward of the Trinisi; there is but little water on the bar, but within, it is navigable some miles for flat-bottomed boats. The valley in the interior is richly cultivated. The shore along the head of the gulf should not be approached within a mile, and attention should be given to the lead.

*General charts 1685, 2836a, 1800.*

*Plan of Vatika bay and Cervi island on 1436. Var. 3° 50' W.*

**CAPE AGIA MARIA** (Lat. 36° 27' N., Long. 22° 56' E.).

—Cape Agia Maria, which forms the eastern point of the entrance to the Kolpos Lakonikos, is the south-western point of Elaphonisos (see page 79), the north-west coast of which island is sinuous and bordered by shallow water extending in places half a mile from the shore, and on which are several islets and rocks named Poriki. This side of the island should not be approached too closely.

A bank extends for one cable from the south-west side of Cape Agia Maria, which, therefore, should not be rounded too closely. 10

*Chart 3372, Kolpos Lakonikos.*

**Coast.** — From the western entrance to the narrow boat channel between Elaphonisos and the main the coast trends north-westward for 8 miles to Cape Arkhangelo. For 3 miles north-westward from the north entrance point of the boat channel, which is low, the shore rises to the small projecting point of Kulendi, on which is a conspicuous tower, 339 feet above the sea; the coast is then high and mountainous, and 3 miles north-westward of Kulendi point is Klaro islet, 3 feet high, north-eastward of which coasters find shelter. A 2-fathoms bank extends 3 cables southward from Klaro islet, and half a cable within its extremity are some rocks 4 feet high. 15 20

At three-quarters of a mile north-westward of Klaro islet is the bluff point of Lyriotiki, with a conspicuous round tower on it, named Phounia tower; and at  $1\frac{6}{10}$  miles further is Cape Arkhangelo; between these two points are three little rocky islets near the shore, and shoal ground extends for about  $2\frac{1}{2}$  cables from the land. 25

**Anchorage** in 12 fathoms of water may be obtained three-quarters of a mile to the northward of Kulendi point, at half a mile from the shore; also in 10 fathoms half a mile south-eastward, and in 11 fathoms half a mile north-westward of Klaro islet. 30

*Plan of Xyli bay on 1436.*

**XYLI BAY** (Lat. 36° 39' N., Long. 22° 51' E.) is open to the southward, and is included between the two converging Capes Arkhangelo and Xyli, which are  $2\frac{3}{4}$  miles apart; the whole bay thus formed is again divided into two inner bays, viz., Arkhangelo bay on the south-eastern, and Xyli bay on the northern side, each point thus covering a separate anchorage. 35

**Arkhangelo bay** is semi-circular, about three-quarters of a mile wide, and open to the north-west; it is sheltered from south-westerly winds by Cape Arkhangelo, a tongue of land with a hill on its extremity, projecting about half a mile north-westward. A little church and some houses serve to mark a cove at the head of the bay, fit for small coasting craft. Mount Astratigos, 1,400 feet high, rises from 40

*General charts 3372, 1685, 2836a, 1800.*

*Plan of Xyli bay on 1436. Var. 3° 50' W.*

the eastern shore of the bay. The water is deep, there being 18 fathoms at one to 2 cables from the shore; from this it shoals very quickly to 5 fathoms at the edge of the rocky coast bank.

- 5 During heavy rains several streams discharge themselves into the sea between Arkhangelo bay and Port Arasma, about 4 miles to the northward, but in summer they are usually dry.

- The northern anchorage is sheltered on the western side by a promontory projecting 2 miles southward, with Xyli peak rising to a height of 1,056 feet near its centre. When seen from the southward, the mount appears like an island in the form of a truncated cone, and at a distance of 12 miles the white rocks on its summit seem almost like the ruins of a castle, but when viewed from the westward its appearance is changed; the land southward of it is comparatively low, ending at Cape Xyli with a round head like an islet joined by an isthmus to the base of the mount.

A lane of deep water runs into the bay, there being a depth of 100 fathoms within the bay at 3 cables off the shore three-quarters of a mile northward of Cape Xyli.

- 20 **Port Arasma.**—The head of Xyli bay is called Port Arasma, and is bordered by rocky shallow water, the depth of 5 fathoms being nearly a quarter of a mile from the shore. In entering, give Cape Xyli (*Lat. 36° 39' N., Long. 22° 49' E.*) a fair berth, steer in and anchor on the western shore with Xyli peak bearing about 266° true, in from 18 to 12 fathoms, sand. The rugged summit of Mount Kimatisa, less than 2 miles back from the north-eastern shore of the bay, is 1,715 feet in height; the base of this mountain, with the high land southward of it, forms the eastern shore, which is skirted all round by rocks and shallow water, and should be given a wide berth.

- 30 About a mile inland from the north-eastern shore is a remarkable flat-topped pillar rock, 1,015 feet high with steep sides, accessible only from the land side, known as the Acropolis rock. It is a natural stronghold, and on it will be found the ruins of a chapel, and the remains of former buildings.

- 35 Vestiges of the ancient town of Blitra, now submerged, can be seen beneath the water off the low shallow point on the north-eastern side of the bay.

**Trade.**—There is little trade here, the port of Elea absorbing it all.

*Chart 3372, Kolpos Lakonikos.*

- 40 **Coast.**—The coast from Cape Xyli trends to the northward for  $5\frac{3}{4}$  miles to Mulaos (Molai) point, which may be distinguished by the conspicuous tower standing on the edge of the cliff, 135 feet high, with an islet 40 feet high beneath it. From Mulaos point the coast continues northward for a further 3 miles to the red cliff at the eastern end of the sand beach at the head of the gulf.

*General charts 3372, 1685, 2836a, 1800.*

*Chart 3372, Kolpos Lakonikos. Var. 3° 50' W.*

**Elea (Eleia)**, a small seaport of rising importance, lies close to the eastward of Mulaos point. It is easily distinguished by the conspicuous tower on the latter, and when approaching from the westward the houses of the town will also be seen ; it is the principal seaport of this district. 5

**LIGHT** (*Lat. 36° 45' N., Long. 22° 48' E.*).—A light is shown at an elevation of 30 feet from an iron column above a hut 20 feet high, situated on the head of the mole on the eastern side of Mulaos point.

**Anchorage**.—As the anchorage is exposed and the depths somewhat irregular, vessels should anchor half a mile westward of the town in not less than 12 fathoms, taking care to avoid the shallow spit that extends from the low sandy point northward of the settlement. 10

**Communication**.—A steamer calls weekly from the Piræus.

**Supplies** may be obtained from Mulaos, a village situated on the eastern slopes of Mount Kurkula, about 6 miles distant from the port by a good road. 15

Kokina tower stands on the edge of a cliff near the head of the gulf, 2½ miles northward of Mulaos point, and 4 cables southward of the red cliff previously mentioned. 20

**Phiniki plain** is well cultivated, with numerous villages extending across the Elos peninsula to Moneñvasia ; it is occasionally partly flooded during the winter.

**Mount Kurkula** (*Lat. 36° 48' N., Long. 22° 49' E.*) stands at the north-eastern angle of the gulf, where the low shore terminates. It is round-topped, 2,990 feet above the sea, and is easily distinguished. 25

The Twin Peaks form a prominent object one mile south of it and 2 miles from the shore line ; the southern peak is the highest, and is 2,561 feet high. From the Twin Peaks this range rapidly falls to the southward in low flat hills to the plain of Phiniki. 30

*Plan of Vatika bay and Cervi island on 1436.*

**ELAPHONISOS** is triangular in form, with a deep bay on its southern side, each side of the island measuring about 3 miles ; the hills are of moderate height, that in the centre being 906 feet high. It is barren, uncultivated, and destitute of water. The north-western side of the island is sinuous and bordered by shallow ground extending in places half a mile from the shore, and on which are several islets and rocks named Poriki ; this side of the island should not be approached too closely. (See page 77.) 35

**Saraceniko bay** (*Lat. 36° 28' N., Long. 22° 57' E.*).—The southern side of Elaphonisos, between Cape Agia Maria the south-western point, and Phrango point the south-eastern, forms the 40

*General charts 3372, 1685, 2836a, 1800.*

*Plan of Vatika bay and Cervi island on 1436. Var. 3° 50' W.*

semi-circular bay of Saraceniko, about a mile deep. The head of the bay is shallow, and on the eastern side of it is the round projecting headland of Point Helena, having the appearance of an island, but  
 5 which is connected with the shore north-eastward of it by a low sandy neck. A vessel requiring immediate shelter from northerly or north-easterly winds, may anchor here, off the beach in from 8 to 15 fathoms water, but the holding ground is uncertain and Vatika bay is a better anchorage.

10 Cape Agia Maria should not be rounded too closely, as a shoal bank extends a cable from it. Phrango point is clifty, clear of danger, steep-to, and may be approached at discretion, but Point Helena is bordered by a bank extending more than half a cable from the shore; between the two, is the little bay of Phrango. From Phrango  
 15 point, the eastern coast of the island is irregular and trends northward nearly  $3\frac{1}{2}$  miles, terminating in a low tongue, on which is a village, with a white chapel.

One and a half miles north of Phrango point is a small bay known as Lephki; H.M.S. *Goldfinch* found this a useful and convenient  
 20 anchorage on more than one occasion, during the survey, with strong westerly and south-westerly winds, when the anchorages in Saraceniko bay and Vatika bay were undesirable.

The northern end of Elaphonisos is low, sandy with rocky projections, and surrounded by shallow water; it is separated from  
 25 Petri isle and the sandy point of the mainland on the north (both of which are bordered by banks), by a tortuous channel about half a cable in width, carrying about one fathom of water and only fit for boats. The current sets strongly through this channel. Elaphonisos was once connected with the mainland, the channel which now  
 30 separates it being then an isthmus.

**VATIKA BAY** (ancient *Sinus Beaticus*), between Elaphonisos on the west, and the coast of the Morea distant  $3\frac{1}{2}$  miles, on the east, is open to the south, about  $4\frac{1}{2}$  miles deep, and semi-circular at its head; it is surrounded by an amphitheatre of hills, the most  
 35 lofty peak to the northward being Mount Aspro, 2,180 feet high, between the foot of which and the low swampy shore at the head of the bay is cultivated land, whilst on the west a chain of heights extends southward to the sea. The bay is frequented by vessels bound either eastward or westward and encountering strong adverse  
 40 winds; with southerly winds, a heavy sea sets in, but they always give sufficient warning of their approach to enable vessels to clear the bay.

Petri isle (*Lat. 36° 30' N., Long. 22° 59' E.*), in the north-western angle of the bay, and on the northern side of the entrance to the boat channel between Elaphonisos and the main, contains many

*General charts 1685, 2836a, 1800.*

*Plan of Vatika bay and Cervi island on 1436. Var. 3° 50' W.*

specimens of petrifications of small branches of trees and oyster shells, in every stage of change from the original state to solid stone. There is a village on the site of an ancient town on the eastern shore of the bay, but little in the shape of fresh provisions can be procured at it. The swampy plain at the head of the bay abounds with hares. 5

The eastern shore of Vatika bay is irregular and bordered by rocks and shoals; in passing near Agios Elia, the eastern entrance point of the bay, the white sandy bottom with black rocks can at times be distinguished. 10

**Neapolis**, the principal town in the neighbourhood, lies on the north-eastern shore of the bay, and is of rising importance. It is a telegraph station and port of call for steamers weekly from the Piræus, Zante, and certain intermediate ports. A fair supply of fresh provisions can generally be obtained. 15

The town of Gliki will be seen half way up the mountain to the south-eastward of Neapolis.

**Anchorage**.—Vessels anchor as convenient off Neapolis in about 15 fathoms, or at the head of Vatika bay, where in easterly or north-easterly winds a good berth may be obtained at half a mile from the shore in 10 or 12 fathoms, sandy bottom. The bottom on the eastern side of the bay is uncertain, being rocky in places. 20

In a westerly or south-westerly gale, or even with the wind at S.S.W., it is stated by local seamen that the best anchorage is about a quarter of a mile eastward of Petri isle, where indeed they consider a vessel to be safe in any wind, the sea forced through the channel between Elaphonisos and the main being here met by the current setting in the opposite direction, which reduces its effect to a swell only; consequently, vessels in this position are said to ride easily at their anchors, for, although squalls may reach the vessels, the cables have no undue strain on them; eastward of this anchorage the sea breaks heavily. 25 30

**Coast**.—Half a mile south-eastward of Agios Elia point is Agios Elia rock surrounded by shallow water extending 2 cables from the shore, and a mile eastward of it is the little chapel of Agios Elia; thence, the high coast trends south-eastward nearly a mile to Zobolo point, 3½ miles westward of Cape Malea. Between these headlands, the high coast recedes northward, forming a bight two-thirds of a mile deep. 35

*Plan of Vatika bay on 1436, and chart 1685.*

**Directions**.—Vessels may round Cape Malea (Lat. 36° 26' N., Long. 23° 12' E.) at any convenient distance, as the water is deep close inshore, but it is advisable with northerly or north-easterly winds, when under sail, to give it a fair berth in order to avoid the light winds, calms, and heavy squalls which occur under the high land. At 40

*General charts 1685, 2836a, 1800.*



*Plan of Vatika bay on 1436, and chart 1685. Var.  $3^{\circ} 40'$  W.*

night the light on Cape Spathi, the northern end of Kithera, is a good guide through the Elaphonisos channel. There is no danger in entering Vatika bay, as the shore on either side may be approached to the distance of half a mile.

In bad weather, or before a northerly gale, Mount Krithina, 2,571 feet high and 4 miles north-westward of Cape Malea, is always shrouded by dense masses of clouds which whirl and roll down the sides of the mountain with great velocity; the wind follows quickly and with great force. Vessels, therefore, having to bear up from the archipelago, especially at night, should be under easy sail to enable them to beat into Vatika bay without having to shorten sail to the squalls from the high land.

In rounding the cape from the westward with the wind northward of West, in all probability a northerly or north-easterly wind will be found blowing in the archipelago.



Cape Malea bearing  $211^{\circ}$  true distant 4 miles.

*Chart 1685, Venetico island to Spezzia island.*

**CAPE MALEA** or **AGIOS ANGELO**, the south-eastern extreme of the Morea, is the termination of the Elos peninsula, and is a high, bold, round headland, rising from deep water to a height of about 1,970 feet; it is clear of danger, steep-to, with from 25 to 30 fathoms not far from it. See page 92.

**LIGHT** (Lat.  $36^{\circ} 27'$  N., Long.  $23^{\circ} 12'$  E.).—A light is shown from a square tower with dwelling, 49 feet high, situated 42 yards within the eastern extreme of the land, and rather more than a mile northward of Cape Malea, at an elevation of 131 feet above the sea.

Vessels coming from the westward, will not therefore open out this light until the southern extreme of Cape Malea is abaft the beam.

**Current.**—The current in the vicinity of Cape Malea generally sets westward about one knot an hour, but its strength and direction vary with the wind. Sailing vessels entering the archipelago should not close



Cape Malea lighthouse.

*General charts 2836a, 1800.*

*Chart 1685, Venetico island to Spezzia island. Var. 3° 40' W.*


the land near the cape with the view of avoiding the current, as the chance of a steady breeze is more favourable in the offing.

**KITHERA or CERIGO ISLAND** is of an irregular oval form, about 16 miles in length north-north-west and south-south-east, 10 miles in extreme breadth, and has an area of about 80 square miles. It is mountainous, arid, and of volcanic formation, the greatest elevation being on the western side, where Mount Kithera attains a height of 1,668 feet, whilst on the eastern side Makri hill is only 63 feet less. There are several caves, of which the two principal are the beautiful stalactite grottos of Agia Sophia and Mylopotamo; the caves are noted for porphyry. The coasts of the island are high, scarped, with small off-lying islets here and there, surrounded by deep water, and the western and south-western sides are irregular with precipitous cliffs.

The climate is temperate and healthy, but the island is liable to violent whirlwinds which often cause considerable destruction to vegetation, destroying trees and vineyards. Sheep and goats find pasture in the mountains; the produce of the valleys are grapes, wine, oil, melons, figs, fruit, hemp, cotton, and honey, all of which are exported. Cereals are grown for home consumption; great numbers of hares, rabbits, and turtledoves are caught, and in autumn, quantities of quails and other birds. The fisheries are productive and form a large item in the commerce of the island. The population of Kithera island in 1896 was 11,812. The principal town is Cerigo, or Kithera, near Kapsali bay, at the southern end of the island; another town and port is Agios Nikolo on the south-eastern side. Potamo, the principal town in the northern part of the island, is connected by telegraph with the mainland. The roads are generally good and lead through the different districts.

*Chart 3372, Kolpos Lakonikos.*

**Cape Spathi** (*Lat. 36° 23' N., Long. 22° 57' E.*), 4½ miles southward of Elaphonisos, consists of salient steep cliffs, 328 feet high, level on the summit, but gradually increasing in height to the southward.



Cape Spathi, bearing 90° true, 6 miles.

**Rock.**—Close off the extremity of the cape is a rock with 3 fathoms on it, surrounded by deep water; this is the only off-lying danger, and the cape may be passed at a distance of half a mile.

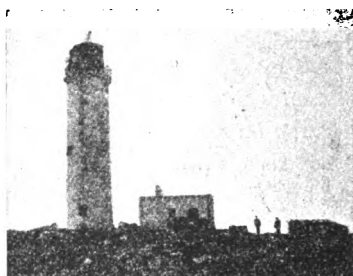
**Landing.**—During north-easterly winds, when landing is impossible at Agia Panaghia (page 87), passengers and goods for the northern district are landed at the cave on the west side of Cape

*General charts 1685, 2836a, 1800.*

*Chart 3372, Kolpos Lakonikos. Var. 3° 50' W.*

Spathi; care must be taken to avoid the rock awash which is right off it and about 2 cables from the shore.

- LIGHT.**—(Lat.  $36^{\circ} 22' N.$ ,  
 5 Long.  $22^{\circ} 57' E.$ ).—On Cape  
 Spathi, 570 yards within its  
 northern extreme, a light is exhi-  
 bited at an elevation of 362 feet  
 above the sea from a circular  
 10 stone tower 82 feet high, with  
 a dwelling near.



Cape Spathi lighthouse.

- Cape Karavugia.** — At  
 1½ miles west-south-westward of  
 Cape Spathi is Cape Karavugia,  
 15 with a low level black islet north-  
 ward of it, 7 feet high and surrounded by shoal rocky ground.

- WEST COAST.**—The western coast of Kithera is high, sinuous,  
 and clear of off-lying hidden dangers; small islets lie here and there at  
 from half a mile to a mile from the land, but the water near them is  
 20 deep. Vessels lying to under the lee of the island during strong north-  
 easterly winds should be under easy sail, as heavy whirling squalls  
 often blow from the high land.

From Cape Karavugia the coast southward is bold and steep, skirted  
 by straggling rocks, landing being difficult.

- 25 **Platanos rock**, 32 feet high, is situated off the point of land  
 forming the northern extreme of Pallikari bay; it appears as a well-  
 defined conical rock, when viewed from the northward and southward.

- Pallikari bay**, which is free from danger, affords a temporary  
 anchorage only, and should be quitted at once on the approach of a  
 30 westerly wind, which creates a turbulent sea all along this coast.

- Cape Ruphugialos** is the northern termination of the remark-  
 able perpendicular dark cliffs, which attain a height of 800 feet, and  
 have a sheer descent to the sea, situated one mile northward of Phana  
 Kopia bay. Off the cape is an islet 38 feet high, and immediately  
 35 southward of it an extensive ravine forms a break in the cliffs, with a  
 shingle beach at the head of the inlet. A rocky islet, 30 feet high,  
 lies on the northern side of the entrance.

- Axini islets** are two small rocky islets; the northern one, about  
 1½ miles south-westward from Cape Ruphugialos and three-quarters of  
 40 a mile from the shore, appears as a low rocky ledge 22 feet high; the  
 southern islet, 31 feet high, 5 cables south-south-eastward from the  
 northern islet, is close in shore. Foul ground extends for a quarter  
 of a mile to the north-westward of this latter islet, and there is also

*General charts 1685, 2836a, 1800.*

*Chart 3372, Kolpos Lakonikos. Var. 3° 50' W.*

a rock on which the sea nearly always breaks nearly 2 cables west-north-westward of it.

There is a narrow passage between the Axini islets with uneven depths, but it is not recommended. 5

**Phana Kopia bay** (*Lat. 36° 14' N., Long. 22° 55' E.*), to the eastward of the Axini islets, affords the only anchorage hereabouts, and was frequently resorted to by H.M.S. *Goldfinch* during the survey; it is moderately protected from the westward, but the backwash, caused by the swell striking the cliffs to the northward, creates a confused sea and there is generally a swell. 10

**Anchorage.**—On coming from the northward the best guide to the anchorage is to pass Cape Ruphugialos at a distance of about half a mile, anchoring in 16 fathoms before the southern Axini islet is shut in by the point of land extending to the northward, which forms the western arm of the bay. Platanos rock will be seen open of the land southward of Cape Ruphugialos as a further guide. If coming from the southward, the northern Axini islet may be rounded closely to the northward. 15

The slopes of Mount Kithera, 1,668 feet high (the highest part of the island), descend abruptly to the southern shores of the bay, and landing is difficult except during fine weather. A good path leads to the village of Mitata, which is not visible from the sea. 20

*Chart 1685, Venetico island to Spezzia island.*

**Lindo islets** lie  $3\frac{1}{2}$  miles southward of the northern Axini islet and half a mile from the shore; the southern and larger is 92 feet high, with its low northern part nearly insulated at about one-third its length, and off its southern and western sides are small detached rocks. 25

The coast hence to Kapsali bay is high, bold, and cliffy, with numerous caves, and about 2 miles from the bay is a cove and landing place named Melidoni bay, exposed to the southward. 30

**Strongilo islets** (*Lat. 36° 10' N., Long. 22° 55' E.*), are two rocky islets, 3 cables apart, about one and a quarter miles south of Lindo islets; the southern one is 110 feet high, and the northward 10 feet less. Detached and sunken rocks exist between them. 35

**Caution.**—Lindo and Strongilo islets lie in the track of vessels navigating between Kapsali and Githion. Being comparatively small and low, they are difficult to make out under the high land, especially at night, and a wide berth should be given them. The features of the coast are not very decided, and it is therefore not easy to fix the position of a vessel when Ovo islet is not available. 40

**Grunia rocks**,  $2\frac{1}{2}$  miles south-eastward of the Strongilo islets and near the eastern point of Melidoni bay, are two rocks 5 or 6 feet

*General charts 1685, 2836a, 1800.*

*Chart 1685, Venetico island to Spezzia island. Var. 3° 50' W.*

above water with a patch of sunken rocks a quarter of a mile north-eastward of them. Grunia rocks are  $1\frac{1}{2}$  miles north-westward of Cape Trakhylion, the western entrance point of Kapsali bay.

5 *Plan of Kapsali bay on chart 1685.*

**KAPSALI BAY**, at the southern end of Kithera, is semi-circular, about 7 cables wide, open to the southward, and falls back 7 cables to the northward. In the north-eastern part of the bay, a little promontory, on which is a small white lighthouse, separates two  
10 small coves. The eastern cove, near the shore of which is the Lazaretto, is circular, shallow, and rocky, and its entrance only 55 yards wide; the other is much larger and used by coasting vessels.

Mount Kapsali, north-westward of the bay, is flat topped and 1,574 feet high, with a conspicuous monastery on its north-western extreme,  
15 from which the mountain descends abruptly in steep rocky terraces to the shore line; Kentdivi hill, immediately northward of the bay, circular in form, with a white house on its summit, rises to a height of 1,088 feet above the sea.

**Cape Trakhylion** (*Lat. 36° 07' N., Long. 22° 59' E.*), on  
20 the western side of the entrance, is the termination of a tongue of clifly land projecting south, and then south-east, thus forming an arm which shelters the bay from south-westerly winds and sea.

**Cape Grosso**, the name of which expresses its appearance, is the eastern entrance point; the land around Kapsali bay is high, with a  
25 slightly irregular shore, and a shingle beach at its head. The water is everywhere deep, and from 25 fathoms in mid-channel at the entrance, it decreases gradually in depth to the head of the bay.

**LIGHT.**—On the western part of the little promontory, at the head of Kapsali bay, a light is shown at an elevation of 82 feet, from  
30 a white turret on a dwelling, 19 feet high.

**Anchorage.**—The best anchorage is 2 cables south-south-westward of the lighthouse, in 16 fathoms, mud and sand. Small vessels moor under cover of the lighthouse point and opposite the village of Kapsali. There are 4 fathoms near the point, and the water shoals  
35 gradually to the beach. The anchorage is safe with all off-shore winds, but it is exposed to those from the southward and south-eastward which send in a heavy sea, and, although the bottom is mud and sand, the anchors do not hold; consequently, it is not safe except under favourable circumstances. The squalls from the hills are often  
40 violent.

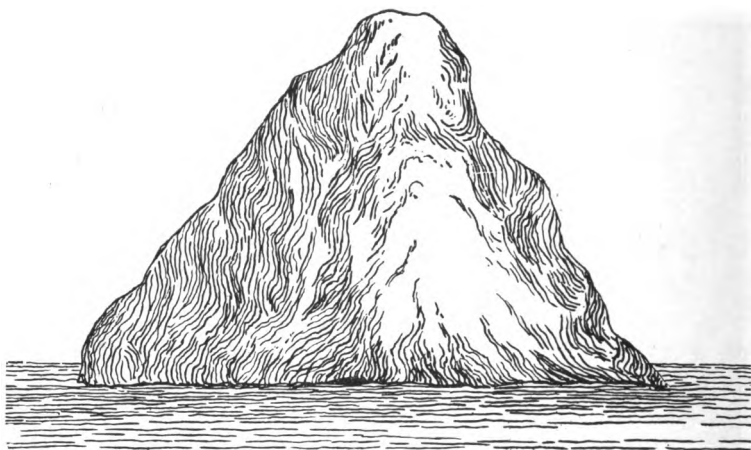
**The town of Cerigo, or Kithera**, is on a hill near the north-western side of the bay, and contained, in 1902, 1,500 inhabit-

*General charts 1685, 2836a, 1800.*





Ovo islet,  $264^{\circ}$  true, distant 8 miles.



Ovo islet,  $197^{\circ}$  true, three-quarters of a mile.

*Plan of Kapsali bay on chart 1685. Var.  $3^{\circ} 50'$  W.*

**ants.** In front of the town is a large Venetian fortress about 590 feet above the sea, which commands the town and bay and is conspicuous from seaward.

**Aspect.**—From the westward, the town appears perched on the hill, and a white mill on Cape Grosso, the only building in that vicinity, cannot be mistaken. 5

**Communication.**—There, is weekly communication with the Piræus and certain intermediate ports.

The town is in telegraphic communication with the general Euro- 10  
pean system.

**Port Regulations.**—The island of Kithera has its own jurisdiction, and is treated as a separate dependency by the Hellenic government; the usual port and quarantine regulations should be observed. 15

**Meteorological table.**—*See Appendix III., page 505.*

*Chart 1685, Venetico island to Spezzia island.*

**Cape Kapela,** 2 miles eastward of Cape Grosso, is the south-eastern extreme of Kithera; from thence the high steep coast, rising about 300 feet above the sea and skirted by rocks, trends northward 20  
for  $5\frac{1}{2}$  miles to Agios Nikolo bay.

**Ovo islet** (ancient *Epla*) (*Lat.  $36^{\circ} 05'$  N., Long.  $23^{\circ} 00'$  E.*) is about 6 cables in length north and south, 647 feet high, and its bare rounded surface appears, as its name implies, like a large egg. The islet is steep-to, the water around it being very deep; it lies 2 miles 25  
southward of Kapsali bay, and serves as a mark for that anchorage. *See views opposite.*

**Kupho islets** are two small rocky islets, the larger of which is 33 feet high, flat, about a cable in diameter, and lies  $105^{\circ}$  true,  $2\frac{1}{4}$  miles from Cape Kapela; the smaller islet bears  $155^{\circ}$  true, about 6 30  
cables from the larger, and 2 cables off its southern side is a rock with  $1\frac{1}{2}$  fathoms water. With the exception of this  $1\frac{1}{2}$ -fathoms rock, the Kupho islets are clear, the water around them deep, and in case of necessity, a vessel with a commanding breeze may pass between them, where there are 50 fathoms; during foggy weather or calms 35  
caution is necessary as the currents are strong and irregular.

**North-east coast.**—From Cape Spathi (page 83) the north-eastern coast of Kithera trends in a south-easterly direction nearly straight to the Dragonera islets, a distance of  $11\frac{3}{4}$  miles; it is generally 40  
high with a few sandy spots, has no off-lying dangers, and the water all along is deep.

**Agia Panaghia.**—At about  $3\frac{3}{4}$  miles south-eastward of Cape Spathi, is the beach and village of Agia Panaghia, the skala or land-

*General charts 1685, 2836a, 1800.*



*Chart 1685, Venetico island to Spezzia island. Var. 3° 50' W.*

ing place for the town of Potamo in the interior; it may be recognised from seaward by the village on the shore, with a tower southward of it.

5 **Communication.**—Steamers call here from the Piræus weekly.

**Telegraph.**—The submarine cable from Neapolis in Vatika bay is landed here, Potamo being a telegraph station.

**Anchorage.**—The anchorage is in about 12 fathoms off the village.

10 **Makri islet** (*Lat. 36° 16' N., Long. 23° 05' E.*).—The islet of Makri,  $9\frac{1}{4}$  miles south-eastward of Cape Spathi, 95 feet high and 7 cables in length north and south, lies under Makri hill close to the shore. Its southern part is connected to the coast by a shallow rocky bar with only 2 feet water, which acts as a perfect breakwater during  
15 southerly winds to the little harbour of Makri north-westward of the islet. The southern end of the islet is low, and a reef of rocks above water extends off about half a cable. About half a mile from the south-eastern side is the smaller islet of Ophidi, with 10 fathoms water between it and Makri islet.

20 **Makri harbour.**—Coasting vessels find shelter in Makri harbour, and there is some small coasting trade, for the convenience of which a stone pier has been constructed in the south-western part of the port near the town; it affords a good berth for one large vessel, and is sheltered from all winds except those between North and East.

25 **Anchorage.**—A good berth is in 12 fathoms, midway between the islet and the main, with the northern extremity of Makri islet bearing about 55° true, 3 cables distant.

*Plan of St. Nikolo bay on chart 1685.*

30 **Dragonera islets.**—Anti Dragonera, the northern and smaller of the two, lies off the eastern point of Kithera, is 5 cables in length, east and west, and 93 feet high; it is clear on all sides, and separated from the mainland by a channel 2 cables wide with 13 fathoms water, which may always be used by keeping nearest to the islet in order to avoid the rocky point of the mainland abreast of it.

35 **Dragonera**, the southern and larger of the two, lies 4 cables southward of and parallel to Anti Dragonera; it is nearly oval in form, about  $6\frac{1}{4}$  cables in length and 120 feet high. Near its eastern extreme, is a rock above water and shoal ground beyond it; here the sea breaks heavily with north-easterly winds. The islet is  $3\frac{1}{2}$  cables  
40 from the nearest part of Mothoni point, and is connected with the mainland north-westward of the islet by a bar with 3 and 4 fathoms water over it, the latter depth being nearly in mid-channel. Foul ground exists in the southern part of the channel west of Dragonera.

*General charts 1685, 2836a, 1800.*

*Plan of St. Nikolo bay on chart 1685. Var. 3° 50' W.*

These islets are covered with scanty grass and low scrub, affording pasturage for a few sheep and goats, but there is no water. From the eastward, Dragonera islet is first seen; on a near approach the appearances of the two are very similar, both having a fall in the middle producing two hummocks. 5

**Anchorage.**—There is temporary anchorage for small vessels between the two islets in from 11 to 20 fathoms water, with the advantage of three passages for leaving.

**Mothoni point** (*Lat. 36° 13' N., Long. 23° 05' E.*).—From the most eastern point of Kithera the coast trends to the south-south-westward for about 1½ miles to Mothoni point, which is low, shelving, and surrounded by rocks at the distance of a cable; from the point, the land rises gradually northward to Mount Agios Georgio, 1,248 feet high, with a small church near its summit. The mount slopes rapidly on its western side, and about half-way down is a counterscarp of reddish earth. 15

**AGIOS NIKOLO BAY.**—From Mothoni point the coast trends west-north-westward for about 1½ miles, and then turns southward for 5½ miles to Cape Kapela (page 87) forming Agios Nikolo bay, which is half a mile deep and open to the south and south-east. There is anchorage here with all off-shore winds; but, being exposed to those from south-east, vessels roll heavily, and wrecks have taken place when surprised by wind from that quarter. 20

On the northern shore of the bay is a castle or fortress on the western side of the entrance to Port Agios Nikolo. 25

Westward of the castle, the shore is beach and steep cliffs with scattered rocks, and here are the ruins of the ancient town of *Cythera*, ancient tombs, and other remains.

**The anchorage** is about 4 cables south-westward of the castle, in 17 fathoms, sand and mud; here Dragonera islet is shut in by Mothoni point. 30

**Port Agios Nikolo**, on the eastern side of the castle, is an inlet open to the south-west, 1½ cables deep, half a cable wide at the entrance, where there are 6 fathoms water, widening within, and forming an excellent little basin with 4 fathoms. Here vessels moor in safety, and the port is the best in the island. The village is on the north-western side of the port and a good road leads to the town of Cerigo (already mentioned), about 10 miles distant, or two hours' drive. 35

**Communication.**—Steamers call at Port Agios Nikolo. 40

**Directions.**—Vessels entering Agios Nikolo bay are generally from the archipelago. After having made Cape Malea and Makri hill;

*General charts 1685, 2836a, 1800.*

*Plan of St. Nikolo bay on chart 1685. Var.  $\text{S}^{\circ} 40' \text{W}$ .*

1,605 feet high, the highest summit on the eastern side of the island, Mount Agios Georgio, a short distance south-eastward of it, will be sighted, and on nearing the port, the Dragonera islets, which should  
5 be left on the starboard hand. Mothoni point should not be rounded nearer than  $1\frac{1}{2}$  or 2 cables, when anchor as before directed.

*Chart 1685, Venetico island to Spezzia island.*

**ANTI KITHERA ISLAND.**—At the distance of 17 miles  $143^{\circ}$  true, from Cape Kapela (the south-eastern point of  
10 Kithera), is Cape Kephali, the northern end of Antikithera (ancient *Ægilia*), a narrow rocky island,  $5\frac{1}{2}$  miles in length N.N.W. and S.S.E., 2 miles wide in the middle, and gradually narrowing to the extremes. The island is hilly, and about  $2\frac{1}{2}$  miles from the  
15 southern end is 1,230 feet high; it has a sterile aspect, the inner valleys are, however, cultivated. The coast is iron-bound, with steep inaccessible cliffs, and no sand is to be seen. The population in 1896 was 494.

**Pori islet** (*Lat.  $35^{\circ} 58' \text{N}$ . Long.  $25^{\circ} 14' \text{E}$* ).—Four miles north-westward of Antikithera are the Pori and Poretti islets and dangers.  
20 Pori islet, the farthest from Antikithera, is the larger, being about 7 cables in length, north-east and south-west, 410 feet high, steep-to, and bearing  $344^{\circ}$  true distant  $4\frac{1}{4}$  miles from Cape Kephali, the north extreme of Antikithera.

**Vythi rock**, with 4 fathoms on it and deep water around, lies  
25  $350^{\circ}$  true, distant 8 cables from the western end of Pori; the soundings are 40 fathoms between the two.

**Poretti islet**, situated 2 miles west-south-westward of Pori islet, is about 2 cables in diameter, 130 feet high, cliffy on all sides, with a  
30 rock above water at its western end, and steep-to all round; between the two islets, the depths are from 40 to 48 fathoms.\*

**Nautilus rock.**—This rock, on which His Majesty's sloop *Nautilus* was wrecked in 1807, lies  $1\frac{1}{4}$  miles  $165^{\circ}$  true from Poretti, and  $3\frac{1}{4}$  miles north-westward of Cape Kephali of Antikithera. The  
35 rock is  $1\frac{1}{2}$  cables in extent east and west, about 10 feet above the sea, and from a distance has the appearance of scattered rocks, being very pointed and rugged; sunken rocks lie east and west of the rock above water, the whole reef being about 4 cables in length. The water is deep in all directions at half a cable from the reef.

\* A singular horizontal mark 7 feet above the water, and precisely the same all round Antikithera, Pori, and Poretti, much resembling a high-water mark in places subject to regular tides, is worthy of notice. The rock being worn away to the depth of 2 inches, so uniformly straight and horizontal, attracts the eye in a moment. It is said that in winter the water is at times higher than usual but never reaches this mark.

*Chart 1685, Venetico island to Spezzia island. Var. 3° 40' W.*

One-third of a mile north-eastward of Nautilus rock, is a rocky uneven shoal about half a mile in diameter, with heads of  $3\frac{1}{4}$  and 4 fathoms; between this shoal and Nautilus rock, the depth is 34 fathoms. 5

**Cape Kephali**, the northern extreme of Antikithera, is formed of red cliffs, 630 feet high, and steep-to; about 4 cables west-north-westward of the cape, is the little islet or rock of Psira, a cable in diameter, with 19 fathoms water between it and the cape.

**The western coast** of Antikithera is high, rugged, clear of danger, with deep water close to. Port Camarella, a rocky indentation in the coast, is at times used by boats during strong easterly winds. 10

**Cape Apolitares** (*Lat. 35° 49' N., Long. 23° 19' E.*), the southern extreme, is a level projecting point about 80 feet high, steep-to, and 16 miles north-westward of Agria Grabusa, near the north-western extreme of Crete. 15

**The eastern coast** is clear, but not so high as the western; there is a small bay on the south-eastern side, but Potamo, about  $1\frac{1}{4}$  miles south-eastward of Cape Kephali, is the only port in the island. 20

*Plan of Port Potamo on 1685.*

**PORT POTAMO**, 3 cables wide at the entrance, and 5 cables deep, is open to the north; it extends southward between high rocky shores, narrowing at two inner points, within which it forms a nearly oval space about 2 cables in extent north-north-east and south-south-west. At the entrance, the depth is 20 fathoms; in the inner part, from 10 to 6 fathoms. The village of Potamo is at the south-western part of the port, and a white fort stands on a hill on the south-eastern side. 25 30

**Cape Kastro**, the east entrance point, is formed of high, round, steep cliffs, on which are the ruins of Paleo Kastro. At  $1\frac{1}{4}$  cables off the north-eastern face of the cape are the Thermoni rocks, 30 feet high, with shallow water extending southward from them, but leaving a narrow passage 5 fathoms deep between them and the shore rocks. 35

With any sea at the entrance, sailing-vessels entering the port should carry sufficient sail to ensure steerage way; with strong northerly winds, a heavy dangerous swell sets in.

*Chart 1685, Venetico I. to Spezzia I., &c.*

**CHANNELS**.—Three channels lead from the westward to the Aegean sea, each named from the island on its northern side. The Elaphonisos channel, the northern, is the narrowest; Kithera channel, 40

*General charts 1685, 2836a, 1800.*

*Chart 1685, Venetico I. to Spezzia I., &c. Var. 3° 40' W.*

the middle, is the most intricate; and Antikithera channel, the southern, the widest and clearest of danger.

- Elaphonisos channel** (*Lat. 36° 24' N., Long. 22° 58' E.*), although the narrowest, is the most direct for vessels from the westward, and is chosen in preference to the others, as it has the advantage of the lights on Cape Matapan, and on Cape Spathi at the northern end of Kithera. With favourable winds, after passing Sapienza island and rounding Cape Matapan, steer for Cape Spathi light, leaving it about 2 miles to the southward, and continue eastward, but, in a sailing vessel, do not pass too close to Cape Malea for fear of getting becalmed (*see* page 81). This channel is much frequented, and many vessels pass through it daily. The state of the weather in the archipelago may thus be learnt from passing vessels.
- In the Elaphonisos channel, it often happens that sailing vessels from the westward approach those from the archipelago, each before the wind, when it becomes necessary to watch and consider which wind is likely to have the mastery. The channel is clear of danger, except for the 3-fathoms rock off Cape Spathi, as described on page 83.

- With north-easterly winds, work up under the lee of Kithera so as to avoid the current, and, if necessary, lie-to, or anchor. The occasional anchorages are, Pallikari, Phana Kopia, and Agios Nikolo bays in Kithera, Saraceniko bay in Elaphonisos, and Vatika bay on the mainland.

- Kithera channel.**—Should a vessel from unfavourable winds or other causes be so far to the southward as to render it advisable to take this channel, Ovo islet (*Lat. 36° 05' N., Long. 23° 00' E.*), described at page 87, should be the guide. By day, with a fair wind, pass on either side of Ovo, and southward of the Kupho islets. At night, pass southward of Ovo, and steer eastward with the islet bearing 276° true; when the high land at the eastern end of Kithera bears westward of 354° true, a vessel will be eastward of the Kupho islets, and may steer as convenient. Cape Spathi light will open out on a 319° true bearing, and Cape Malea light when bearing 345° true. In working through this channel, keep nearer Kithera than Pori islet and check the vessel's position by bearings of Ovo islet, Kapsali bay light, and the high land at the eastern end of Kithera.

- Antikithera channel**, between the island of this name and Crete, is the widest and without impediment. The Madara or White mountains of Crete, about 8,100 feet high, and nearly always capped with snow, are seen at a great distance. In taking this channel, vessels should keep Antikithera island on board.

*Chart 1685, Venetico island to Spezzia island. Var. 3° 40' W.*

**MOREA, EAST COAST.**—From Cape Malea (*Lat. 36° 26' N., Long. 23° 12' E.*) (page 82), the high bold southern termination of the Elos peninsula, the east coast of the Morea trends in a general north-north-west direction for 16½ miles to the islet and town of Monemvasia; the shore between is irregular, with only two or three isolated rocks close in, and the water deep. Cape Kamili, 6½ miles from Cape Malea, is a small low promontory with a hummock on it, said to resemble the back of a camel.

*Charts 1518, 1685, 2836a.*

The town of Monemvasia is conspicuous from seaward, and the coast thence trends north and north-east 6 miles to Cape Ieraka, and then north-north-westward 52 miles to the head of the Gulf of Nauplia; it is all irregular with deep water, and no shelter or good anchorage until near the head of the gulf. Nothing can be more rugged or inhospitable in its general appearance than the coast of the Morea from Cape Malea northward, and along the west side of the Gulf of Nauplia, which is all high and mountainous. Mounts Saphlaurus, Sevetila, and Zavitsa rise respectively 2,458, 3,622, and 3,190 feet above the sea, immediately over the coast; the former mountain is about half-way between Monemvasia and Nauplia, and the latter 7 miles from the head of the gulf.

*Plan of Monemvasia on 1436.*

**MONEMVASIA** (*Lat. 36° 41' N., Long. 23° 03' E.*).—The town of this name with a population in 1896, of 495, stands on an islet 9 cables in length east and west, or at right angles to the general line of coast, to which it is connected by a rocky ridge, over which a bridge 536 feet in length has been constructed on 14 small arches. The castle is on the summit of the islet, and the town on its south-eastern face, occupying one-third the length towards the east end, is enclosed between two walls descending from the castle to the sea; the houses rise one above the other, and are intersected by narrow intricate streets. Many of the buildings, of Venetian construction, are now in a ruinous state; there is little or no trade.

At 2 miles in-shore on the mainland, Mount Lakanas rises 1,960 feet above the sea.

**LIGHT.**—A light, elevated 54 feet, is exhibited from a square masonry tower with dwelling attached, 23 feet high, erected on Cape Monemvasia.

**Temporary anchorage** during summer will be found to the northward of the bridge, in from 15 to 18 fathoms water, sand and weeds. In the event of a southerly or south-westerly gale with a falling barometer off Cape Malea, the sea here will be comparatively

*General charts 1685, 2836a, 1800.*

*Plan of Monemvasia on 1436. Var. 3° 40' W.*

smooth, though the squalls blow over the low neck of land with great violence, and a vessel taking shelter should be prepared for a sudden change of wind to the northward of west, with a continuance of heavy squalls (*see* page 15).

**Communication.**—There is weekly connection with Nauplia by a small steamer. Monemvasia is also a telegraph station.

**Port Paleo.**—At  $2\frac{1}{2}$  miles northward of Monemvasia is Port Paleo, a little bay with anchorage for small vessels in 4 fathoms water, sheltered from all northerly and westerly winds. There is no town here, but about half a mile westward from the head of the port and near the shore are the ruins of Paleo Monemvasia, the ancient *Epidauros Limera*.

**Kremidi bay**, about  $1\frac{1}{2}$  miles westward of the cape of the same name, is nearly half a mile deep, 6 cables wide at the entrance, with from 6 to 19 fathoms water, and sheltered from all northerly and westerly winds, but open to the south and south-east.

**Cape Kremidi** is situated  $2\frac{7}{10}$  miles north-eastward of Cape Monemvasia; a bank with depths under 10 fathoms extends from  $3\frac{1}{3}$  to 5 cables south-westward from the cape, and at a distance of  $1\frac{1}{4}$  cables therefrom the depth is 5 fathoms.

*Chart 1685, Venetico island to Spezzia island.*

**Cape Ieraka** (Lat.  $36^{\circ} 46' N.$ , Long.  $23^{\circ} 46' E.$ ) is a prominent headland north-north-eastward 3 miles from Cape Kremidi, the coast between falling back one mile and containing the little islet of Daskalio.

*Plan of Port Ieraka on 1436.*

**Port Ieraka** (ancient *Zarax*),  $1\frac{1}{4}$  miles north-westward of the cape of that name, is difficult to make out on account of its narrow entrance, which between Cape Kari and Point Kyphanta, its south-east and north-west entrance points respectively, is only 3 cables wide, with high land around it. It is open to the north-eastward, and on the west side of the entrance are the extensive ruins of the Acropolis of Zarax. (*See* view on plan.) At a third of a mile within the entrance, the width is reduced to one cable; the port then trends west-north-westward for a quarter of a mile, diminishing in breadth with a depth of 7 to 2 fathoms water, mud bottom, and fit only for small craft. The port thence leads into a large shallow lagoon, with a staked fishery; there is no village.

**Landmark.**—A church, which forms a useful mark when making Port Ieraka, is situated on the summit of a hill near the coast nearly

*General charts 1685, 2836a, 1800.*

*Plan of Port Ieraka on 1436. Var.  $3^{\circ} 40'$  W.*

one mile north-westward of Cape Vathi, the point about 3 miles northward of Cape Ieraka.



*Acropolis, bearing  
 $208^{\circ}$  true,  $1\frac{1}{4}$  miles.*

Entrance to Port Ieraka.

*Chart 1685, Venetico island to Spezzia island.*

**Leonidi**, or **Plaka**, with a population of 3,683 in the year 1896, stands about  $1\frac{1}{2}$  miles back from the shore, midway between Cape Ieraka and the head of Nauplia gulf.

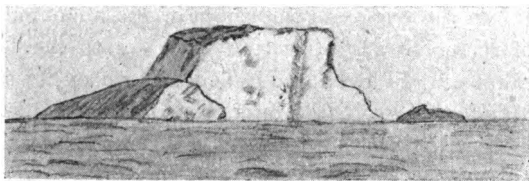
**LIGHT**.—A light is exhibited at an elevation of 36 feet above the sea from an iron pole with shed, 20 feet high, on the coast near Leonidi.

**Communication**.—There is a Custom house at the port, and steamers from Piræus and Nauplia occasionally call.

Leonidi is a telegraph station.

**Karavi** (*Lat.  $36^{\circ} 46'$  N., Long.  $23^{\circ} 36'$  E.*), a small barren islet or rock, 28 miles  $44^{\circ}$  true from Cape Malea, derives its name from its likeness at a distance to a ship under sail. It is 110 feet high, steep-to on all sides and almost inaccessible; in fine weather it is frequented by fishermen, who state that the finest fish are to be caught here.

Parapóla light is obscured over the islet.



Karavi island, bearing  $41^{\circ}$  true, distant 10 miles.

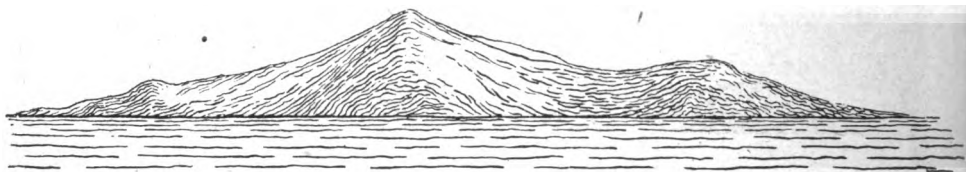
**PARAPÓLA**, lying in the track of vessels bound to Athens, is  $10\frac{1}{2}$  miles north-westward of Karavi islet, and its south end is  $31\frac{1}{2}$  miles,  $25^{\circ}$  true, from Cape Malea. The islet is  $1\frac{3}{4}$  miles in length N.N.W. and S.S.E., about 700 feet high, with a sunken rock on either side of its north end; on rounding Cape Malea, it appears like an egg cut in two, though on a nearer approach this appearance alters. It is difficult of access, and is uninhabited, except by the

*General charts 1685, 2836a, 1800.*



*Chart 1685, Venetico island to Spezzia island. Var. 3° 40' W.*

lighthouse keepers, though a hermit formerly dwelt here; it offers no attractions to passing vessels.



Parapóla, bearing about 230° true, 15 miles.

- LIGHT.**—A light is shown at an elevation of 367 feet, from an octagonal tower on square dwelling, 33 feet high, on the summit of the north-west point of Parapóla.

*Chart 2836a, Grecian archipelago, south portion.*

- Phalconera**, the third islet of the group, is 600 feet high, and lies 14 miles 73° true from Karavi; it is only occasionally sighted by vessels on the route to Athens, but on the direct course to the Doro channel it is more often seen. A sunken rock lies at its west end. It is uninhabited, but visited by fishermen.

- Caution.**—The current at times runs strongly in the vicinity of these islets, and raises a cross sea; sailing-vessels should therefore pass them at a prudent distance.

*Charts 1518, 1685.*

- The GULF of ARGOLIKOS or NAUPLIA** from between Cape Sabbatiki on the west, and the island of Spetsópoulon on the east, trends in a north-north-west direction 27 miles to the low shore of the plain of Argos at its head. It is bounded on either side by high mountainous land, the coast line on the west being a little irregular and interspersed with low shore, whilst that on the east has several bays, projecting points, and islands. In the central part, the water is 450 fathoms deep, but all over the head of the gulf within a distance of about 4 miles of the shore there are from 20 to 6 fathoms, and vessels if necessary may anchor in any part of it, on mud or sand bottom.

- Western shore.**—From Cape Sabbatiki (*Lat. 37° 11' N., Long. 22° 55' E.*) the coast trends north-north-westward for about 15½ miles to Cape Astros, thence about 8¼ miles in the same direction to Myli, where it curves east-north-eastward for 3¾ miles, curving

*General charts 2836a, 1800.*

*Charts 1518, 1685. Var. 3° 40' W.*

again to the south-south-east for 2 miles to Nauplia, forming the head of the gulf.

*Chart 1518, Gulf of Nauplia.*

**Astros** is a fortification standing on a rocky promontory projecting from the plains of the same name, on the west shore of the Gulf of Nauplia, and 9 miles southward of the town of Nauplia. It has no port, but a vessel might drop an anchor for temporary purposes with off-shore winds. The village is small, and here the second Greek Congress was held, in the month of April, 1823.



Astros lighthouse.

**LIGHT.**—A light, elevated 75 feet above the sea, is shown from a square masonry tower with dwelling attached, 23 feet high, situated on the cape to the south-eastward of the Acropolis of Astros.

**Telegraph.**—Astros (*Lat. 37° 25' N., Long. 22° 46' E.*) is a telegraph station.

**Caution.**—The soundings between Cape Astros and Cape Purno,  $2\frac{3}{4}$  miles to the north-north-westward, are reported to be shoaler than shown on the chart.

*Plan 1308, Head of the Gulf of Nauplia.*

**Myli.**—On the shore on the west side of the head of the gulf opposite Nauplia, and under Mount Pontinus, 582 feet high, is the village of Myli. The shallow ground, which extends all round the head of the gulf as far as Nauplia, prevents a near approach in a vessel of large draught, and in anchoring, the lead should be the guide. The south wind is here felt to its full extent, but the holding ground is good. Myli is on the line of railway from Argos to Tripolitza.

*Chart 1518, Gulf of Nauplia.*

**Argos.**—At about 3 miles inland from the head of the gulf, and 5 miles northward of Myli, on the west side of the large and fertile plain of Argos, is the town of the same name, with a population, in 1896, of 9,980. Here are the scattered remains of ancient Argos, and on a hill 936 feet above the sea and west of the town is the Acropolis of Larissa, with a beacon on its north-west corner, formerly a place of some strength.

Argos is on the line of railway from Corinth to Tripolitza, and a branch goes to Nauplia.

The telegraph-office is open until midnight.

*General charts 1518, 2836a, 1860.*

*Plan 1308, Head of the Gulf of Nauplia. Var. 3° 40' W.*

**Landmarks.**—Conspicuous objects round the head of the Gulf of Nauplia are the ruins on the summit of Mount Pontinus above Myli; the abattoir at the head of the bay  $2\frac{6}{10}$  miles north-eastward  
 5 of Myli pier; the white chapel on the summit of Mount Agios Elias, 664 feet high, about  $1\frac{1}{2}$  miles eastward from the eastern side of the head of the gulf; two white buildings on Monastery hill, a mile southward of the last mentioned; the hospital and barracks on Itskali (when north of Panagia point), and the white house at Palamidi.

10 **NAUPLIA** (*Lat. 37° 34' N., Long. 22° 48' E.*), commonly called Napoli di Romania, is on the eastern side and near the head of the gulf, and on the site of the former town, one of the most ancient in Greece. It stands upon the north side of a table land 282 feet high, which projects from a steep lofty ridge named Palamidi. The  
 15 streets are narrow, but straight, and the principal one divides the town into two parts, connecting the two squares, and terminating at the land gate. The larger square is mostly occupied by barracks and coffee-houses. Some of the houses are large and comfortable, but the majority are small and crowded, though apparently clean and neat,  
 20 with some good shops.

The town has two fortresses, one of which stands on the summit of the precipitous ridge of Palamidi, south-east of the town, 719 feet high, and inaccessible on all sides except at one point on the east, where it is connected with a range of barren hills. The second fortress, that  
 25 of the Acro-Nauplia, stands on the table land south of the town, at the foot of the Palamidi. Nauplia was the seat of government after it fell into the hands of the Greeks, till 1832, when it was removed to Athens.

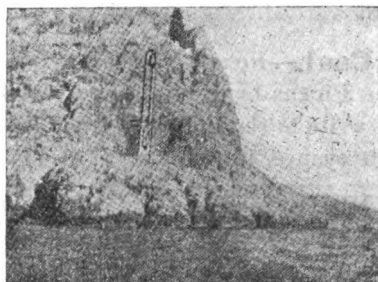
The landing quay is on the north side of the town, near the Custom  
 30 house, where the shore forms a well-sheltered bight with a general depth of from  $1\frac{1}{4}$  to  $3\frac{3}{4}$  fathoms; a channel to the quay has been dredged to a depth of about 21 feet, and a space eastward of the quay is to be dredged to 19 feet. There is also a mole built on the rocks off the western end of the town, extending for nearly one cable to the  
 35 north-westward from the harbour master's office. The little isolated rocky islet of Burgi, 64 feet high, on which is a fort and prison, is about a quarter of a mile north-west of the town.

The fortress of Palamidi can be distinguished from a vessel soon after passing Spetsai, and the Acropolis of Larissa and the town of  
 40 Argos when a few miles farther up the gulf.

*General charts 1518, 2836a, 1800.*

*Plan 1308, Head of the Gulf of Nauplia. Var. 3° 40' W.*

**LIGHTS** (Lat.  $37^{\circ}34' N.$ , Long.  $22^{\circ}48' E.$ ).—Upon Panagia point (the name given to the south-west extreme of the peninsula), is erected an iron column attached to an iron hut, from which a light is exhibited at a height of 40 feet above the sea.



Panagia point light-standard.

A light is also exhibited from the end of the mole.

**The anchorage** at Nauplia is in from 7 to 9 fathoms, mud bottom, at any convenient distance westward and south-westward of the town; vessels of light draught may anchor off the mole, as in southerly winds Panagia point breaks the sea to a great extent. The bottom is hard in various places from 3 to  $7\frac{1}{2}$  cables westward and south-westward of Panagia point. East of the mole, the water is shallow and the air is not so pure. In addition to the bank, with depths under 5 fathoms, which follows round the head of the gulf at the distance of a mile, there is a patch of hard ground with 4 to  $5\frac{1}{2}$  fathoms water on it, the south-east extremity bearing  $271^{\circ}$  true, distant  $8\frac{3}{4}$  cables from Fort Burgi. Some of the boulders on these patches are 6 or 7 feet in height. Large vessels should therefore not anchor with Fort Burgi bearing eastward of  $78^{\circ}$  true. Although a nasty short sea gets up with southerly winds, making it uncomfortable for ships' boats, large vessels lie here all seasons.

**Bank.**—A bank with a least depth of 6 fathoms, hard bottom, lies  $236^{\circ}$  true, distant 7 to 8 cables from Fort Burgi. Large boulders were reported to have been seen in this position, with a depth of 5 fathoms over them, but an examination in 1899 failed to discover them. At  $1\frac{3}{4}$  cables northward of this position there is a depth of 5 fathoms.

**Population.**—The town in 1896 had a population of 5,955.

**Supplies.**—Fresh provisions are plentiful and cheap.

**Communication.**—Steamers run daily to the Piræus, in addition to which regular connection is kept up with Kithera island, Patras, and certain intermediate ports.

By a branch line from the town of Argos, Nauplia has railway communication with Corinth, Athens, Patras, and Tripolitza.

Nauplia is a telegraph station; the office is open until midnight.

**Trade.**—The chief exports from Nauplia consist of tobacco, cheese, oil, olives, and sultana raisins. The imports are grain, rice, coffee,

*General charts 1518, 2836a, 1800.*

- *Chart 1308, Head of the Gulf of Nauplia.*—Var.  $3^{\circ} 40'$  W.  
sugar, timber, copper, iron, cloth and cotton textiles, dried fish, and glassware.

**Coal.**—No stock of coal is kept here, but it can be obtained from  
5 the Piræus by giving a week's notice. The best plan is to telegraph or write to the Consul there, who will make all the arrangements as to conveyance, price, &c.

**Water.**—Myli (*Lat.  $37^{\circ} 33'$  N., Long.  $22^{\circ} 44'$  E.*) is an excellent watering place, the stream running all the year round, the only inconvenience being the shallowness of the shore; a starting hose is necessary. Water can also be obtained free, alongside the quay at Nauplia.

**Winds.**—During summer, the sea and land breezes are very regular; the sea breeze sets in from the S.S.E. about 11h. a.m., and blows until between 8h. and 10h. p.m. It is then succeeded by the land  
15 wind from N.N.E., which continues until about 6h. a.m., when it falls calm until the sea breeze again sets in. Vessels leaving the anchorage under sail should get under weigh with the first of the land wind, so as to be sufficiently far out of the gulf when the sea breeze springs up in the forenoon.

20 *Charts 1525, 1518.*

**EASTERN SHORE.**—Spetsai island, on the eastern side of the entrance to the Gulf of Nauplia, is separated from the mainland by a channel one mile wide, forming a second entrance to the gulf, used by vessels approaching from the eastward. Cape Milianos, on  
25 the mainland,  $2\frac{1}{2}$  miles north-eastward of the east point of Spetsai island, is the true eastern limit of the gulf; from it the land trends for  $1\frac{1}{2}$  miles to the westward, then north-westward for  $6\frac{1}{2}$  miles to Cape Kóraka. From this point to Cape Rui, 14 miles to the north-westward, is an extensive bay  $2\frac{1}{2}$  to 6 miles deep, containing the islands of  
30 Hypsili, Platia, and Tolon; from Cape Rui the land trends north-north-westward for  $3\frac{1}{4}$  miles to Nauplia.

*Chart 1525, Hydra bay, &c.*

**SPETSAI or SPEZZIA ISLAND** is 4 miles in length north-west and south-east,  $2\frac{1}{4}$  miles in breadth, being somewhat in the shape  
35 of a pear. A ridge runs through the island, which attains its greatest elevation in Mount Elias (*Lat.  $37^{\circ} 16'$  N., Long.  $23^{\circ} 08'$  E.*), near the centre, 815 feet high, with a church on it. Its coastline is irregular, and on the northern side the shore off the town, from the lighthouse point for  $1\frac{1}{2}$  miles to the westward, is bordered by a bank extending off  
40  $1\frac{1}{2}$  cables.

The western part of the coast is steep-to, but the salient points should be avoided.

*General charts 1685, 2836a, 1800.*



To face page 101.]



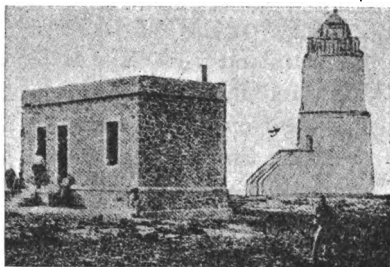
Spetsai island bearing  $299^{\circ}$  true, distant 4 to 5 miles.

*Chart 1525, Hydra bay, &c. Var. 3° 40' W.*

Though rocky and generally barren, Spetsai has pasturage for goats, and many patches of soil which are carefully cultivated; it produces a little wine. It has one tolerable spring, which is near the middle of the island; the well water is said to be brackish. The climate is exceedingly healthy. The island in 1896 contained a population of 4,432.

For sketch of island, *see* opposite.

**LIGHT** (*Lat. 37° 16' N., Long. 23° 10' E.*).—A light is shown at an elevation of 98 feet from a circular tower 34 feet high, with a dwelling near it, situated near the east point of the island on the southern side of the entrance to the Strait of Spetsai.



Spetsai lighthouse.

**Spetsai.**—The town is situated on the north-east side of the island near the eastern end, and had in 1896 a population of 4,409, or nearly all the inhabitants of the island.

A small inlet at the east end of the town, about 3 cables deep, with depths of 2 to 3 fathoms, affords accommodation for coasting vessels, which secure head and stern. On the west side going in are some rocks with one fathom water on them. Large vessels anchor about three-quarters of a mile north-west of the lighthouse, and about a quarter of a mile from the shore, in 12 to 15 fathoms, mud, sand, and small coral, fair holding ground; or if necessary farther out.

**Communication** is maintained with Piræus by steamer twice a week. Spetsai town is also a telegraph station.

**Spetsópoulon** or **Spezzia Pulo**, on the south-east side of Spezzia, is about  $1\frac{1}{2}$  miles in length, and is separated from Spetsai by a narrow passage known as Pulo strait, carrying depths of 6 to 7 fathoms water.

**Rock.**—A rock with about one fathom of water on it lies on the north side of Pulo strait, and about  $1\frac{1}{4}$  cables from the south-east coast of Spetsai island, narrowing the navigable breadth of the strait to 2 cables.

**Mikro and Joannis islets** form a group of three or four islets surrounded by rocks above and below water, lying two-thirds of a mile north-eastward of Point Mezzo, the south-eastern end of Spetsópoulon, with depths of from 4 to 8 fathoms between. In rounding Point Mezzo, the islets should be given a prudent berth.

*General charts 1685, 2836a, 1800.*



*Chart 1525, Hydra bay, &c. Var. 3° 40' W.*

- Bromboli**, a high conical rock or islet, lying  $6\frac{1}{2}$  cables north-westward of the western end of Spetsai, has from 3 to 7 fathoms around, and deep water outside it. At about  $1\frac{1}{2}$  cables south-south-eastward of Bromboli, is a rock just above the surface of the water. Between this rock and Spetsai is a channel with depths of 12 fathoms, but which is narrowed to about 3 cables in breadth by a shoal with 4 feet water on it, lying  $1\frac{1}{2}$  cables from the north-west point of Spetsai; between the shoal and Spetsai island, the depth is from 3 to 7 fathoms.
- 10 **STRAIT of SPETSAI or SPEZZIA**, between Spetsai island and the mainland from Cape Milianos to Port Kheli, is about one mile in width, and forms the entrance to the Gulf of Nauplia for vessels approaching from the eastward.

- In working through the strait a large vessel should avoid too near an approach to the Spetsai island shore from the lighthouse until westward of the town, and the same precaution should be taken on the mainland side, when in the vicinity of the  $3\frac{1}{2}$ -fathom shoal mentioned on page 103.

- CAPE MILIANOS** (*Lat. 37° 17' N., Long. 23° 12' E.*), the south-eastern extreme of the point of the mainland on the north-east side of Spetsai strait, is a steep white point with a church on it. Rocks uncovered and covered extend 2 cables southward of the cape, and to avoid them when rounding the point from the westward do not open Ventza islet of Trikeri until Mount Agios Elias, 1,118 feet high, on the mainland, is in line with Tigani island bearing 344° true, on account of the current, which depends on the force and direction from which the wind may have been blowing.

**Trikeri shoal**, with 3 fathoms on it and deep water around, lies  $2\frac{2}{10}$  miles 141° true from Cape Milianos.

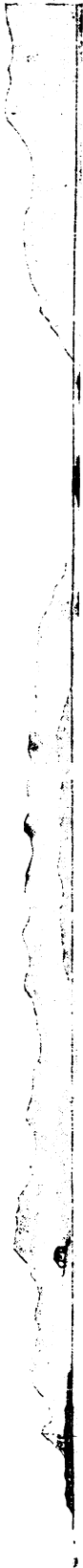
- 30 *See views opposite.*

**Milianos shoal**, a small rocky patch of  $3\frac{3}{4}$  fathoms and deep water around, lies  $1\frac{1}{4}$  miles 168° true from Cape Milianos, and the same distance west-north-westward of Trikeri shoal.

*See views opposite and at page 103.*

- 35 **Clearing marks.**—Mount Eros, the highest peak of Hydra island, seen half-way between Trikeri point (the northern extreme of the island of that name) and Petasi island (*see* page 109) 72° true leads northward of Trikeri shoal and southward of Milianos shoal; Mount Eros shut in behind Trikeri point 69° true leads southward of Trikeri shoal. Drapi islet open of the southern end of Trikeri island bearing 84° true also leads southward of Trikeri shoal. Alexandro islet well open north of Trikeri island and bearing 87° true, leads northward of Milianos shoal; Mount Agios Elias  $6\frac{1}{2}$  miles northward of Cape Milianos open either east or west of the church on Cape Milianos leads eastward or westward respectively of Milianos shoal;

*General charts 1685, 2836a, 1800.*



*Joannis islet.*  
*Chapod*  
*bearing 221° true.*

*Spetsipoulon.*

*View from Trikeri shoal.*

*Spetsai.*



*Dokos island.*

*56° true.*

*Hydra town.*

*Hydra island.*

*View from Trikeri shoal.*

*Trikeri island.*



*Hydra.*

*Alexandro.*

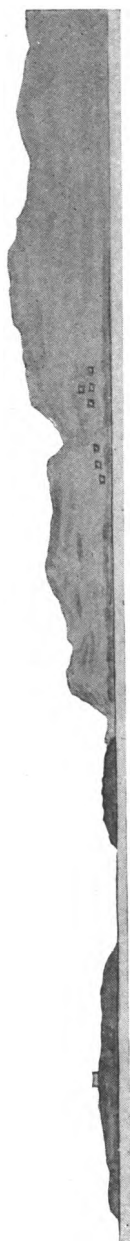
*84° true.*

*View from Milianos shoal.*

*Trikeri.*







*Joannis islet.  
Chapel.*

*Spetsópoulon.  
View from Milianos shoal.*

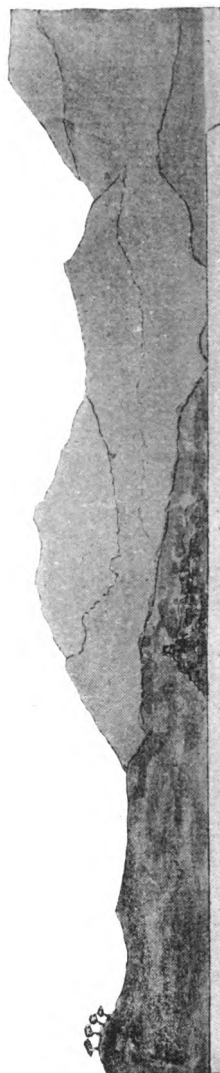


*Spetsópoulon.*

*Spetsai island.*

*View from Milianos shoal.*

245° true.



*Church on Cape Milianos  
bearing 313° true.*

*View from Milianos shoal.*

*Chart 1525, Hydra bay, &c. Var. 3° 40' W.*

and Point Mezzo, the south-east point of Spetsópoulon, kept between Joannis and Mikro islets, bearing 212° true, leads westward of Trikeri and eastward of Milianos shoals.

These dangers should be passed with caution, as at times the current sets over them with considerable strength. 5

**Coast.**—From Cape Milianos the coast trends westward and north-westward, for  $3\frac{1}{2}$  miles, to Chenesar islet, on the south-eastern side of the entrance to Port Kheli; it is irregular, with several little coves, and rocky patches off some of the projecting points. 10

**Shallow ground.**—From the point next west of Cape Milianos, shallow ground extends 3 cables to the southward; at half this distance there is only one fathom of water. The northern point of Trikeri island in line with the south extreme of Karteli islet, bearing about 91° true, leads well southward of this bank. In working through the Strait of Spetsai, avoid too near an approach to either shore. 15

**Temporary anchorage** will be found in the mouth of the bay about 2 miles westward of Cape Milianos; the bottom is sand and tolerably good holding ground.

**Chenesar islet** (*Lat. 37° 18' N., Long. 23° 08' E.*), on the south-eastern side of the entrance to Port Kheli, is about 2 cables long east and west with its eastern end close to the mainland, it is bordered by shallow water, and half a cable from its south-western side is a rock with 3 feet of water. 20

**Shoal.**—A detached rocky shoal, with  $3\frac{1}{2}$  fathoms of water over it, and 9 fathoms between it and the shore, lies 6 cables 140° true from the south-west end of Chenesar islet, and 3 cables from the nearest shore. No marks can be given for this danger, though the discoloration of the water over it may sometimes be seen. 25

*Plan of Port Kheli on chart 2836a.*

**PORT KHELI.**—The entrance to this port, about half a mile northward of Chenesar islet and 3 miles north-eastward from the western end of the island of Spetsai, is narrow, but widens within into a spacious basin; the anchorage, however, available for large vessels is limited to the inner part of the channel, where the depth is about 5 fathoms, mud; the depth all round the harbour being sufficient only for small vessels. 30 35

The channel into the port is about a mile in length, and the distance between Kaluiri rock and the lighthouse point, which may be considered the entrance points of the port, is 4 cables; this breadth diminishes to less than 2 cables about halfway in. On the south-eastern side of the port are the ruins of the ancient town of *Mazes*, the 40

*General charts 1685, 2836a, 1800.*

*Plan of Port Kheli on chart 2836a. Var. 3° 40' W.*

greater part of which are covered by water; some of the buildings could have been but 8 or 10 feet square.

**Kaluiro rock, beacon.**—The three inner points on the south-eastern side of the entrance channel when in line form a good clearing mark for the Kaluiri rock, which is marked by a beacon 13 feet high, and is situated off the south-east entrance point.

The modern village, Leonidion, and Custom house are on the western shore of the port. Fresh provisions may be procured at Kranidi, 3½ miles inland.

**LIGHT** (*Lat. 37° 19' N., Long. 23° 08' E.*).—A light is shown, at an elevation of 69 feet from an iron pole, 20 feet in height, with a shed attached, situated on the north-west point of the entrance to Port Kheli.

**A telegraph cable** connects this port with the most northern point of Spetsai island.

**Communication.**—Steamers calling at Spetsai from Piræus and Nauplia, occasionally stop at Port Kheli. The town of Kranidi just alluded to is a telegraph station.

*Charts 1525, 1518.*

**Coast.**—From the entrance to Port Kheli the coast trends north-westward to Cape Vevaronda round the bay of the same name, and then westward to Cape Kóraka, 4½ miles from Chenesar islet, it then turns to the northward for 2½ miles to Cape Thýnni; the shore between is irregular, with various small cliffy projections.

The eastern shore of Vevaronda bay is low and bordered by shallow water, which extends more than half a mile from the shore. The bay is frequented for salt, which is made in the lake, supplied from salt springs, midway between the bay and the head of Port Kheli. At about half a mile northward of Cape Kóraka is the little islet of the same name, bordered by rocks to a distance of 1½ cables; there is a narrow boat-passage between the islet and the shore.

**Shoal.**—3½ cables, 192° true, from Cape Thýnni, and nearly the same distance from the coast, is a shoal patch with 3 fathoms water on it, which should be avoided when in this vicinity.

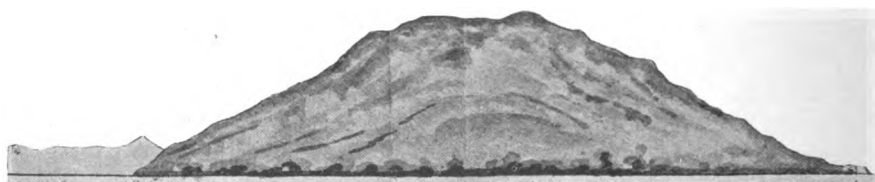
*Chart 1518, Gulf of Nauplia.*

**Port Kiladía.**—Cape Ieri lies nearly 5 miles north-westward of Cape Thýnni, and these two capes form the horns of a bight 4½ miles deep, with an irregular shore indented by two or three bays. In the eastern part of the bight is Port Kiladía, about three-quarters of a mile deep, and about a third of a mile wide. It is the seaport of Kranidi, a town situated on a hill 627 feet high, 2½ miles to the south-eastward, and which in 1896 contained 6,954 inhabitants; on the south-

*General charts 1525, 2836a, 1800.*







122° true.

Hypsili island from Tolon rock.

*Low point  
opposite  
Spetsai,  
133° true.*

*Chart 1518, Gulf of Nauplia. Var. 3° 40' W.*

western side of the port are a monastery, Custom house, a few houses, and jetties.

The port is fronted by Kiladia islet, having a narrow passage on either side of it into the harbour, which is landlocked, and in the outer part from 3 to 5 fathoms deep, mud bottom, but with less than 3 fathoms abreast the Custom house, whence it shoals rapidly to the head.

**Vúrlia bay** is a deep indentation in the coast between Capes Vúrlia and Ieri. The depths are from 10 to 60 fathoms, and it is open to the south-west.

**Cape Ieri** is a projecting point, 5 miles to the north-westward of which is Port Khaidari, the low coast between forming a slight bay, with deep water and clear of danger, excepting the shallow water bordering the shore at a distance of 2 cables, for 2 miles to the northward of Cape Ieri.

**Hypsili island** (*Lat. 37° 26' N., Long. 22° 59' E.*), a mile and a half in length east and west, and 786 feet high, is bold and cliffy on the south side, and steep to all round, the 100-fathoms line of soundings passing within about 1½ cables of its southern side. It lies nearly 1½ miles south-westward of Cape Ieri, with depths of from 32 to 80 fathoms between.

*See view opposite.*

**Port Khaidari or Vivares**, 5 miles north-westward of Cape Ieri, is an inlet trending north-westerly nearly a mile, by about a third of a mile in breadth. It carries from 30 fathoms water at the entrance to 5 fathoms at 2 cables from its head, where it leads into a shallow lagoon. The port is well sheltered, but surrounded by high land which causes baffling winds, and makes it difficult to enter or leave under sail; the largest vessel, however, may pass the shore within a quarter of a cable. The entrance is narrow and difficult to make out, but it may be known by the ruins of a Venetian fort on the west point of entrance, and a little chapel on the east point; there are no houses here.

**Platia island**, 1½ miles in length north-west and south-east, is bold all round. It lies about 1½ miles southward of Port Khaidari, and on its western side is a conspicuous white triangular cliff, one of the marks for avoiding Tolon rock lying 1½ miles westward of the island. *See view on chart 1518.*

**Tolon rock**, with 2 fathoms water on it, and 14 to 36 fathoms around, lies about 1½ miles 263° true from the white cliff on Platia island and a little over a mile south-eastward of Dhascalia islet on the west side of Tolon island.

Cape Khondros, open westward of Tolon island, bearing 309° true, leads south-west of the rock; Mount Chakali, 319° true, open eastward

*General charts 2836a, 1800.*

*Chart 1518, Gulf of Nauplia. Var. 3° 40' W.*

of Tolon island, leads north-east of the rock; Mount Ortholithi, open southward of the triangular cliff on Platia island, bearing 81° true, leads south of Tolon rock. (*See view on chart 1518.*)

- 5 **Port Tolon** (*Lat. 37° 31' N., Long. 22° 52' E.*).—At about 3 miles westward of Port Khaidari and  $1\frac{1}{2}$  miles south-eastward of Cape Khondros is Tolon island, a mile in length, bold and steep-to. Its north-west coast forms, with Cape Rui opposite, a narrow passage with 7 fathoms of water into Port Tolon; fronting the inner end or
- 10 eastern pass to the port is the little islet Koro-nisi, with deep water around it. Tolon island shelters vessels from south-west winds, but Port Tolon is useless except for small vessels that can make fast to the shore, the bottom being loose gravel. In the bay east of Port Tolon, except near the shore, the water is everywhere too deep for
- 15 ordinary anchorage. There is a colony of 'Cretans in the village of Roui at Port Tolon.

**Dhascalía.**—On the south-western side of Tolon island, at the entrance of a rocky bay, is the little islet of Dhascalía with a building on it.

- 20 *Plan 1308, Head of the Gulf of Nauplia.*

**St. Vincent shoal.**—The coast from Cape Rui trends north-west for  $1\frac{1}{2}$  miles to Cape Khondros; nearly 4 cables west-south-westward from the south-west extreme of the latter cape lies St. Vincent shoal, with  $5\frac{1}{2}$  fathoms water on it, which should be avoided in vessels

25 of heavy draught. The south-west edge of Dhascalía islet bearing eastward of 115° true, and open of the nearer part of Tolon island, will lead south-westward of the shoal; there are 8 and 9 fathoms water close to it.

- Karathona bay** (*Lat. 37° 32' N., Long. 22° 49' E.*).—From
- 30 Cape Khondros the shore trends north-north-westward nearly  $2\frac{1}{2}$  miles to Nauplia. Karathona bay on the north side of Cape Khondros affords good anchorage in 11 fathoms, 4 cables from the head of the bay, and a quarter of a mile to the northward of Karathona island, which is 45 feet high and connected to the cape by a shallow bank.
- 35 From the anchorage the depth decreases gradually to the shore.

**Nauplia.**—(*See page 98.*)

*General charts 1518, 2836a, 1800.*

## CHAPTER IV.

EAST COAST OF GREECE FROM SPETSAI ISLAND TO EURIPO STRAIT,  
INCLUDING DORO CHANNEL; WITH THE ADJACENT ISLANDS,  
INCLUDING ZEA AND PART OF ANDROS.

VARIAION decreasing about  $8\frac{3}{4}'$  annually.

*Chart 1525, Hydra bay, &c. Var.  $3^{\circ} 40' W$ .*

**COAST.**—From Cape Milianos (page 102), Cape Muzaki bears  $48^{\circ}$  true distant 5 miles, a deep bay being formed between them, to the south-eastward of which lies the Trikeri group of islands and dangers. From Cape Muzaki the coast falls back to the north-westward for  $3\frac{1}{4}$  miles and then turns to the eastward for about 15 miles to the Kelevini islands, which lie close to the land off Cape Skyllaion. The islands of Dokos and Hydra lying off this coast form the open stretch of water known as Hydra bay. 5

**Trikeri group.**—At 5 miles eastward of Spetsai and 4 miles westward of Hydra, is the island of Trikeri (*Lat.  $37^{\circ} 16' N.$ , Long.  $23^{\circ} 17' E.$* ), a mile in length north and south, having two hills, the southern one being 490 feet high; between the hills the island is nearly divided into two parts connected by a neck about a cable across. 15

Between Trikeri and the western end of Hydra are the following islets:—Drapī, Strongilo (conical), Karteli, Disaki, which consists of two separate parts, cut through at the narrowest place, Ventza, and Alexandro; this latter islet, next in size to Trikeri, lies south of Cape Bisti, the western end of Hydra, from which it is separated by a clear and deep channel half a mile wide. (*See view of Spetsai island at page 101, and also view at page 108.*) 20

**Shallow patches.**—The soundings between and around these islets are generally deep, but between Strongilo and Karteli, and nearly on the line joining the north-west sides of these islets, there are two shallow patches, one nearly half a mile from Strongilo, with only 4 fathoms of water on it; the other patch, about the same distance from Karteli, has 7 fathoms on it. There is also another patch with 5 fathoms on it,  $1\frac{1}{2}$  cables north-north-eastward of Karteli with a 2-fathoms patch between it and the island. Disaki and Ventza are nearly joined by a bank with 2 fathoms least water over it, extending 30

*General chart: 2836a, 1800.*

*Chart 1525, Hydra bay, &c. Var. 3° 40' W.*

from the former islet, but there is a narrow passage with 6 fathoms water, close to the south-western end of Ventza.

**Stavrónisos**, nearly  $4\frac{1}{2}$  miles south-eastward from the western extremity of Hydra, is high, steep, and about half a mile in diameter, with two rocks above water on its south-western side. Stavro can be seen even at night for a considerable distance.

**STAVRO ROCK.**—This danger, with only 2 feet of water over it and with depths of 25 to 38 fathoms around, lies 7 cables  $198^\circ$  true from the south-western end of Stavro. Mount Eros of Hydra well open to the westward of Stavro bearing  $14^\circ$  true leads west of the rock.

Approaching the rock from the southward, be careful to keep all the island of Spetsai open of the southern end of Trikeri, bearing  $281^\circ$  true, until Mount Eros is well open westward of Stavro; the northern peak of Trikeri in line with the conical islet of Strongilo, bearing  $291^\circ$  true, leads three-quarters of a mile southward of the rock, and Mount Eros open eastward of Stavro  $4^\circ$  true, leads eastward of the rock. *See view opposite.*

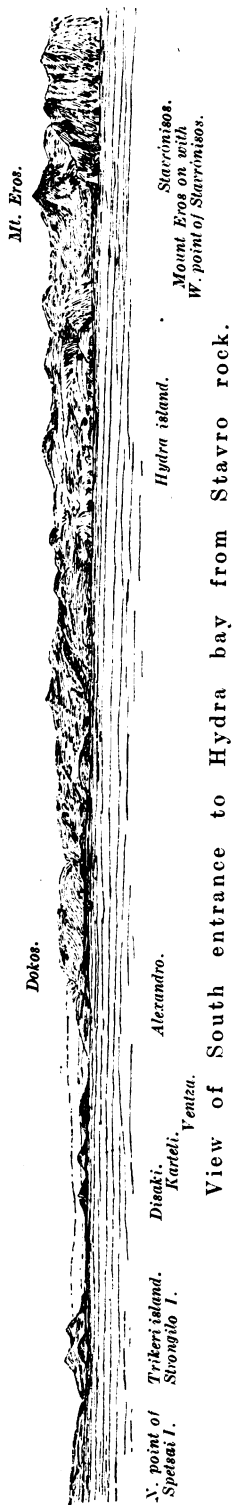
**Dokos or Dhoko island** (*Lat.  $37^\circ 20'$  N., Long.  $23^\circ 20'$  E.*), separated from the mainland by Dhoko strait and from Hydra island by Petasi strait, is  $3\frac{3}{4}$  miles in length east and west, and about  $1\frac{1}{2}$  miles in breadth; it is very high and steep on the southern side, and at the western end 1,004 feet above the sea. Its coast line is irregular, and near the eastern end on the north side is a bay nearly a mile deep, having from 7 to 22 fathoms water; a cove on the western side of the bay is used by the Hydriotes to lay up their worn-out vessels, and another cove on the eastern side is at times used for the same purpose. Dokos has a few straggling cornfields, and had a population of only 49 in 1896.

**Shoal.**—At a cable northward of the eastern entrance point of the bay above mentioned is a rocky shoal about half a cable in extent, with 2 fathoms water on it, 4 to 7 fathoms around, and deep water near it to the northward. Kivotos islet off Port Molos (in Hydra), open of the north-eastern extreme of Dokos,  $119^\circ$  true, leads outside the shoal. A 5-fathoms patch lies about the same distance eastward of the west entrance point.

**Dhoko strait**, between the western end of Dokos and the shore of Cape Muzaki of the main, is a clear and deep channel 4 cables wide; but it is inconvenient for sailing vessels, as the wind here is almost always baffling, and calms are frequent, caused by the high land of Dokos.

**Petasi strait**, between Dokos and Hydra islands, is more than a mile wide, clear of danger, with deep water throughout. As Dokos is

*General charts 2836a, 1800.*





*Chart 1525, Hydra bay, &c. Var. 3° 40' W.*

high and bluff, it is necessary when working through this passage to watch the variable squalls, or eddy winds. At times, the current here runs to the eastward even with fresh north-easterly winds.

On the south side of Petasi strait, and northward of Cape Bisti, the western point of Hydra island, lie the islets of Petasi and Pontikonisi, the latter the western of the two, 2 and 6 cables respectively from the shore; the water within them is deep and the channels fit for coasters.

**HYDRA ISLAND** (ancient *Hydrea*) is 11 miles in length in an east-north-east and west-south-west direction, with an extreme breadth from Cape Rigas to the town of Hydra of about  $2\frac{3}{4}$  miles. It is almost entirely composed of bare sterile rocky land,\* Mount Eros near the centre being 1,958 feet above the sea. The coast line is rugged and irregular, with deep water nearly everywhere around it, more especially at the eastern end, where the depth of 100 fathoms is found at 2 cables from the land. In 1917 the population of the island was estimated at 4,500, all of Albanian descent. The name of the island is pronounced Idra.

There is practically no agriculture, and 90 per cent. of food stuffs has to be brought to the island. The principal industries are sponge fishing and small shipbuilding.

**The port of Hydra** is about 2 cables deep, with 11 fathoms water in the middle; all vessels moor with the stern to the shore. There is no anchorage off the port.

**LIGHTS** (*Lat. 37° 21' N., Long. 23° 28' E.*).—A light, elevated 40 feet, is shown from an iron column, 19 feet high, with an iron shed attached, situated on Tabia point, the eastern entrance point of Port Hydra.

Harbour lights are also shown from the east and west jetties in the port.

**The principal town** of the island bears the same name and stands on a barren rugged height surrounding the port near the middle of the north shore; the houses are substantially built, many of them have large and airy apartments, with marble pavements, the public edifices include many churches and religious establishments, an exchange, a college, commercial, navigation, and elementary schools. The streets are uneven and precipitous, but remarkably clean. The manufactures are silk and cotton stuffs, soap, leather, &c. The population of the town, a large proportion of whom are unable to derive subsistence from the soil, devote themselves to trade, commerce, and navigation.

\* It has been said that its layer of soil was so thin as not to afford the Hydriotes sufficient earth to bury their dead.



*Chart 1525, Hydra bay, &c. Var.  $3^{\circ} 30'$  W.*

**Communication.**—There is connection with Piræus and other ports twice a week by steamer. The town of Hydra is also a telegraph station.

- 5 **Ports Molos and Mandraki.**—The little port of Molos on the west, and that of Mandraki on the east, are much used by the Hydriotes to lay up worn-out vessels.

In Port Mandraki, a buoy is moored to assist vessels in warping in or out in contrary winds, though the port is reported to be nearly useless as an anchorage on account of the number of wrecks.

- Islets.**—To the westward of the town of Hydra are two small islets, Kamini and Vlikos; they lie about 2 cables from the shore, and Vlikos, the western one, is connected to the shore by a bank with 4 fathoms water on it. Farther westward is Palamida, another little islet or rock; and off Port Molos are the Kivotos and Erimo-nisi; these islets lie about 2 cables from the shore; within them the water is deep and the channels fit for coasters.

- CAPE ZURVA**, the eastern extremity of Hydra island, is the outlying and turning point for vessels bound to Athens from Cape Malea; it is 27 miles  $13^{\circ}$  true from Parapola island (*see* page 95), and 10 miles  $42^{\circ}$  true from Stavro rock.

*See view opposite.*

- LIGHT** (*Lat.  $37^{\circ} 22'$  N., Long.  $23^{\circ} 35'$  E.*).—At 93 yards within the extremity of Cape Zurva is a square tower 36 feet high, built above the keeper's dwelling, from which a light is shown at an elevation of 118 feet above the sea.

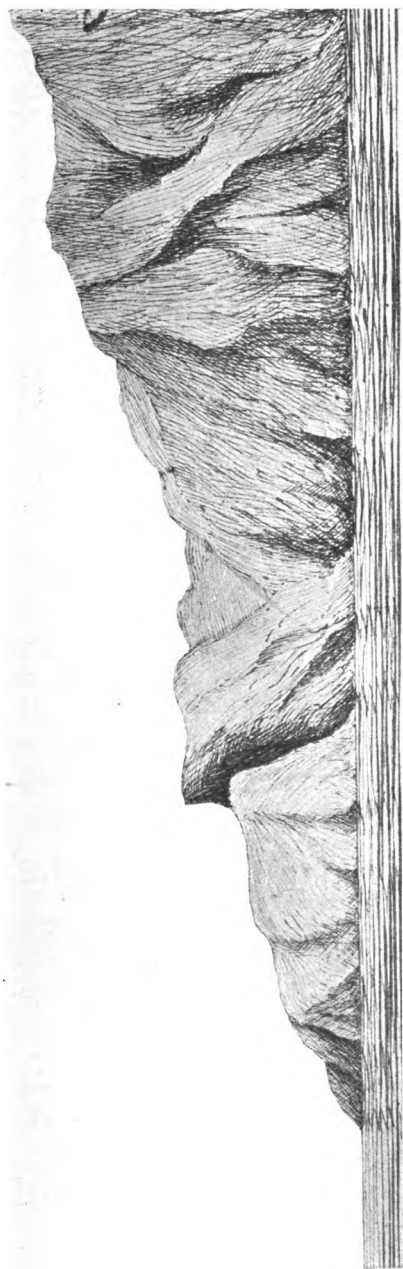
- 25 **The south coast** of Hydra appears to be broken and rocky, and the water is everywhere too deep for anchorage. Between Capes Zurva and Rigas,  $4\frac{1}{2}$  miles apart, the 100-fathoms line is only from 2 to 8 cables from the shore; in this space there is one bay, but it appears to be useless. Westward of Cape Rigas the water is not so deep, but even here, the 30-fathoms line is nowhere more than half a mile from the shore. On the whole of this coast there are no off-lying dangers excepting a small island called Nisizza, which lies 3 cables off shore at 2 miles to the westward of Cape Rigas.

**KAPPARI ISLET AND SHOALS.**—On the northern side of Cape Muzaki on the mainland (page 107), the shore forms a bay nearly a mile deep with from 6 to 20 fathoms of water, open to the



Cape Zurva lighthouse.

*General charts 2836a, 1800.*



*Cape Zurva.  
Lighthouse not shown.*

*Hydra island.*

Cape Zurva, Hydra island, bearing  $188^{\circ}$  true, 12 miles.



*Chart 1525, Hydra bay, &c. Var. 3° 40' W.*

eastward, and called Port Kuverta. Kappari islet, surrounded by shallow water, lies off the northern point of the bay, with a narrow channel 6 fathoms deep between. A patch of rocks above water extends north-eastward nearly 2 cables from the islet, with 18 fathoms close to them. At about 2 cables north-eastward of the outer rock is a shoal with 3 fathoms water on it. Outside this 3-fathoms shoal, and  $6\frac{1}{2}$  cables east-north-eastward of the outer rock, is another rocky patch with 5 fathoms water, and 18 to 20 fathoms around ; it is 4° true, nearly  $1\frac{1}{2}$  miles from Cape Muzaki. 5 10

The north-eastern point of Trikeri island in line with the western extreme of Dokos island, bearing 175° true, leads a cable westward of the 5-fathoms patch, and between it and the 3-fathoms shoal. To lead eastward of the shoals keep the west end of Dokos island bearing westward of 186° true, on which bearing the whole of Trikeri will be shut in by Dokos. 15

**Port Kappari**, to the northward of Port Kuverta, is a bay about  $1\frac{3}{4}$  miles deep, partly formed by two tongues of land, with a low shore at its head ; on the shore near the northern angle of the bay is a convent. The bay is open to the eastward, but on the southern side there is anchorage in from 9 to 13 fathoms, mud bottom and good holding ground. 20

On the north side of the bay is the town or village of Kastri ; thence a low tongue of land, with the ruins of *Hermione* on it, projects eastward, forming the south side of Port Kastri, fit only for small vessels. North-eastward of Port Kastri is another bay with good holding ground. 25

**LIGHT** (*Lat. 37° 23' N., Long. 23° 16' E.*).—A light, elevated 68 feet above the sea, is shown from an iron column with iron hut, 20 feet in height, on Cape Kastri. 30

**Mount Didyma**.—Cape Thermisi, a projecting point, is  $2\frac{1}{4}$  miles eastward of the entrance to Port Kastri ; this cape and Cape Muzaki, containing the four bays just alluded to, are the ends of spurs from the elevated mountain of Didyma, which at about  $5\frac{1}{2}$  miles from this coast is 3,541 feet above the sea. The high land, though of less elevation, continues eastward to Cape Skyllaion,  $10\frac{1}{2}$  miles from Cape Thermisi, and its base all along is a low shore clear of danger until within about half a mile westward of Supia islet. 35

**Supia islet** lies about 2 cables from the shore,  $1\frac{3}{4}$  miles west-south-westward of Cape Skyllaion and near the eastern end of the low shore. 40

**Shoal**.—At a distance of  $4\frac{1}{2}$  cables, 238° true, from the south-west point of Supia islet and  $3\frac{3}{4}$  cables from the shore, is a rocky shoal, about

*General charts 1657, 2836a, 1800.*

*Chart 1525, Hydra bay, &c. Var. 3° 40' W.*

30 yards in extent, with  $2\frac{1}{2}$  fathoms of water on it, and deep water around, with depths of 10 to 12 fathoms for a distance of 2 cables between it and the shore.

- 5 **HYDRA BAY**, between the low shore of the mainland on the north, and Dokos and Hydra islands on the south, is everywhere clear of danger except the shoals in the western part and the shoal south-westward of Supia islet already named.

- Anchorage.**—The anchorage in this bay is off the northern shore, 10 between Cape Thermisi and a low projecting shingle point  $83^\circ$  true,  $4\frac{3}{4}$  miles from it. A little north-eastward of the point is a large white building, formerly a convent, and also an olive grove, and 11 cables west-north-westward of the point, is a small chapel. The best berth is in 19 fathoms of water, about half a mile from the shore, with the 15 chapel bearing about  $0^\circ$  true, and the point  $86^\circ$  true. This anchorage was known in the British squadron, during the Greek revolution, as Garden bay.

- From Cape Thermisi, the shore nearly as far eastward as Supia islet, 13 miles west of Cape Skyllaion, is bordered by a narrow bank from 20 one to 2 cables wide, falling suddenly to deep water; at night it should not be approached into a less depth than 30 fathoms, nor when eastward of the point  $1\frac{1}{2}$  miles westward of Supia islet, closer than 40 fathoms. During winter, the north-easterly winds blow over the high land in violent squalls.

- 25 **CAPE SKYLLAION** or **SKYLI** (*Lat.  $37^\circ 26'$  N., Long.  $23^\circ 32'$  E.*) is nearly 6 miles eastward of the low shingle point of Hydra bay anchorage, and 5 miles,  $329^\circ$  true, from Cape Zurva, the eastern extremity of Hydra island. Cape Skyllaion, the termination of the high mountainous range which extends eastward from Mount 30 Didyma, is the south-western entrance point of the Gulf of Athens.

- Kelevini islands.**—These two small islands at the foot of Cape Skyllaion are together  $1\frac{1}{2}$  miles in length. The western of the two is connected to the southern part of the cape by a reef with 3 feet water on it, but the two islands are separated from each other by a narrow 35 passage, with 8 fathoms water, called Kelevini pass. A reef extends nearly 2 cables to the southward from a point midway along the south-eastern side of the outer island with deep water close-to. These islands, with Cape Skyllaion, form the north entrance point to Hydra bay, and Cape Zurva (the eastern extreme of Hydra) the south point of 40 entrance.

**Winds and Currents.**—In a sailing vessel, during strong north-easterly winds, the passage through Hydra bay is tedious, as the high land causes heavy squalls in all directions, rendering it necessary

*General charts 1657, 2836a, 1800.*

*Chart 1525, Hydra bay, &c. Var. 3° 30' W.*

to keep under easy sail. Sailing ships are therefore recommended to pass southward of Hydra.

It often happens that the sea breeze, which draws through the bay from the eastward, fails just as it reaches Dokos island, so that a vessel coming from the eastward will most likely be becalmed for some hours, and have to work through the night against the land wind. The water, however, in Petasi strait is deep on either shore. The current in this strait, at times, sets eastward with a fresh north-easterly breeze.

The currents between the islands and the main, as well as outside the islands, depend principally upon the force and direction of the winds. It often happens, however, that the land and sea breezes in the summer cause great variation in the currents; the land winds out of the Gulfs of Nauplia and Athens, necessarily cause eddy currents in the vicinity of Spetsai and Hydra, both in the channel within and outside the islands. To this may be ascribed a ripple, occasioned by the meeting of the two currents, which generally appears about half-way between the eastern end of Hydra and Stavronisos, at the intervals between the land and sea breezes, and which before now, here and elsewhere, has been taken for shoal water.

*Chart 1657, Gulf of Athens, &c.*

**GULF OF ATHENS** or **SARONIKOS**.—The entrance to the Gulf of Athens is between Cape Skyllaion and Cape Sunion, 27 miles east-north-eastward. The distance from Cape Skyllaion, or from a line between it and Agios Georgio island to the Piræus, is about 30 miles.

**Agios Georgio** (ancient *Belbina*) or **San Tzortzi**, is a small island lying 17 miles eastward of the Kelevini islands, and  $9\frac{1}{2}$  miles southward of Gaidarionisos westward of Cape Sunion. Agios Georgio is about 3 miles in length in a north-west and south-easterly direction, narrow, and 1,080 feet high. The island is rocky, and but little cultivated, with a few inhabitants, who possess small flocks of sheep and goats.

**LIGHT** (*Lat. 37° 28' N., Long. 23° 57' E.*).—A light is shown at an elevation of 485 feet above the sea, from a circular tower, 21 feet high, surmounting a dwelling, 3 cables to the north-westward of the south-east point of Agios Georgio.

*Plan 1517, Poros island.*

**POROS ISLAND** (ancient *Kalauria*), on the western side of the Gulf of Athens, is rather more than 4 miles northward of the Kelevini islands. It is irregular in form, extending  $4\frac{3}{4}$  miles east and west, with a spur or peninsula projecting from its northern side, and another from its southern side, the extremes of which are rather more than 4 miles from each other. The island is remarkable for its rocks of

*General charts 1525, 1657, 2836a, 1800.*

*Plan 1517, Poros island. Var. 3° 40' W.*

granite; the highest part, towards the eastern end, is 1,134 feet high, and a little westward are the ruins of a temple of Juno.

The Sphæria peninsula (ancient *Sphæria*), on the southern side of the island, is connected to it by a low sandy isthmus, and only separated from the main coast by a passage a little more than a cable wide, in which mud, wrecks, and some rocks considerably contract the navigable channel. The town of Poros is on the south-west and western sides of the peninsula, and on the latter side is the government dockyard, with a patent slip, &c. This dockyard and slip are intended for building and repairing small wooden vessels, but both are closed at the present time. The town is indifferent, but has a singular appearance, with its white houses perched among its dark volcanic rocks. The population of the town in 1896 amounted to 4,611.

**Communication.**—Steamers between Piræus and Nauplia call almost daily. The town is also a telegraph station.

**Poros bay**, on the south side of Poros island, is formed between the north-east face of the Sphæria peninsula and the south coast of the island, and was formerly known in the British squadron as Monastery bay, from the monastery standing 200 yards back from the north shore. This bay above half a mile square and open to the south-east, affords good summer anchorage in 15 to 19 fathoms, sand, with the monastery just in line with the point nearly half a mile westward of it bearing 68° true; the peak of Agios Georgio island in line or about 1½° open of the north-eastern point of the bay; and Burgi islet about 158° true. The soundings thence decrease gradually to near the beach at the head of the bay.

The water is deep in approaching, and excepting the Mavrocordato shoal of 6 fathoms, which should be avoided in vessels of heavy draught, it is everywhere clear. Burgi islet, on the south side of the bay, has a fort on it; and 1½ cables west of it is Lazaretto islet and another little islet on a rocky bank extending 2 cables from a sandy point, under the lee of which there is anchorage for small vessels, with good holding ground.

*Plan 1517 and chart 1525.*

**Mavrocordato shoal** (*Lat. 37° 29' N., Long. 23° 29' E.*).—This rocky shoal, about half a cable in extent, with from 6 to 8 fathoms on it, and deep water all round, lies in the centre of the approach to Poros bay, 5½ cables, 75° true, from Burgi islet. The east point of inner Kelevini island well open of Cape Spadi the north point of Cape Skyllaion peninsula, 150° true, leads eastward of the shoal. From the eastward, keep the summit with three peaks (which appear over the isthmus) open northward of the house standing some way up the slope of Sphæria peninsula, until the monastery on the northern shore of the bay is open, when a vessel will be westward of the shoal. See view on plan 1517.

*General charts 1525, 1657, 2336a, 1800.*

*Plan 1517, Poros island. Var. 3° 40' W.*

**Water.**—Excellent water may be obtained from the mainland three-quarters of a mile to the southward of Burgi, at the foot of a lemon grove, by applying to the authorities of the town, who, except in times of great drought, will order the water to be turned on. 5

**Channel to Poros harbour.**—The channel into Poros harbour from Poros bay is about 6 cables in length, and runs close along the southern shore of the Sphæria peninsula, the main shore being bordered by a shallow bank. This channel was reported in 1891 to have a depth of 14 feet, but as the depths vary, if it is intended to pass through in a small vessel, it would be well to sound it before entering. Commander Napier of H.M. ship *Torch*, 1874, writes:—"The eastern entrance to Poros harbour or that from Poros bay, is very tortuous, but a steam vessel of not more than 14 feet draught may pass through in safety. Quick helm, great attention to the soundings, and hugging the northern shore so close that the yard arms almost touch the houses is, however, required." 10 15

Small vessels bound to Poros harbour from the southward, find this channel convenient, especially when blowing fresh, saving the great distance round Poros island as well as being in smooth water. The shallow bank mentioned as extending from the mainland into the channel is steep-to, and easily distinguished. 20

**Modhi islet.**—This rocky islet, off the east end of Poros island, is half a mile in length north-east and south-west, narrow, 334 feet high, and has some resemblance to a lion couchant. Some rocks lie off its north-eastern end, but the water all round is deep, and there are from 12 to 45 fathoms between the islet and the Poros shore, from which it is distant half a mile. The winds here are always baffling, caused by the high land of Poros, and the passage between is rarely used by sailing vessels. 25 30

*Chart 1525, Hydra bay, &c.*

**Loney rock** (*Lat. 37° 31' N., Long. 23° 35' E.*), with 7 fathoms water over it, lies nearly 2 miles eastward of the north-east point of Modhi islet. 35

*Plan 1517, Poros island.*

**Platia islet**,  $1\frac{1}{2}$  miles north-eastward of Point Akherdo, the north extreme of Poros island, is about  $1\frac{1}{2}$  cables in length, and only 24 feet high; it is surrounded by shallow water, and at nearly 2 cables west-south-west from the west end is a rocky patch with only one fathom over it. The channel between this shallow patch and the north extreme of Poros is clear, and from 45 to upwards of 120 fathoms deep. 40

**The coast** of Poros, from Cape Kalauri, the eastern point of the island, trends north-westward nearly 3 miles to Point Akherdo; it is

*General charts 1525, 1657, 2836a, 1800.*



*Plan 1517, Poros island. Var. 3° 40' W.*

irregular, forming a bight in which are several little bays and indentations, and steep-to, the 100-fathoms line of soundings passing both headlands at the distance of 4 cables. Between Point Akherdo and  
5 Dana point, the west extreme of the island and the eastern entrance point to Port Pogon, the distance is  $3\frac{1}{2}$  miles; the coast between forms a large bight, and the water is everywhere deep.

**PORT POGON** (*Lat. 37° 31' N., Long. 23° 26' E.*), on the south-western side of the island of Poros, is of considerable extent,  
10 and, being completely landlocked, is one of the finest ports in the archipelago for capacity, convenient depth of water, and shelter. It is about 3 miles in length in a west-north-west and east-south-east direction, with an average working breadth of about half a mile. The above space may be considered to be divided into two portions, the  
15 outer and larger being Port Pogon, the inner and eastern part Poros harbour. The depth of water throughout is from 8 to 17 fathoms.

The head of Poros harbour is formed by the Sphæria peninsula, on which is the town of Poros, with a small government dockyard (at present closed). North of the dockyard is a small inner harbour,  
20 under 10 feet deep, but which is being dredged to a depth of 12 feet. The southern shore of the port, bordered by a narrow shallow bank, is reported to have changed considerably since the date of the survey. A low point on this shore, 7 cables westward from the town, is conspicuous when entering the harbour, being covered with vegetation  
25 almost to the extreme edge.

The town or village of Galata is situated on the south shore of Poros harbour, opposite the west point of the peninsula. *See view.*



View of Galata, Poros harbour.

The North entrance channel opens northward at right angles to the western part of Port Pogon, and is from  $2\frac{1}{2}$  to  $3\frac{1}{2}$  cables wide between  
30 bold shores, 6 cables in length, and with depths of from 30 to 18 fathoms.

*General charts 1525, 1657, 2836a, 1800.*

*Plan 1517, Poros island. Var. 3° 40' W.*

**Anchorage.**—The anchorage affording the best holding ground is situated with Obelisk point, on the north shore,  $4\frac{1}{2}$  cables westward of the dockyard, bearing  $110^\circ$  true, distant about  $2\frac{1}{2}$  cables.

**LIGHT.**—At Dana point, the eastern entrance point of Port Pogon, is a square lighthouse above a dwelling, 31 feet high, from which a light is exhibited at an elevation of 106 feet above the sea.

*Chart 1657, Gulf of Athens.*

**Directions.** — A vessel from Athens, bound to Port Pogon, should give Cape Turlo, the north-eastern extreme of Ægina, a wide berth, to clear the dangers around it. When off Cape Agia Marina of the same island, the Petrokaravon rocks will be seen; when abreast of Cape Andonis, which should also have a wide berth, steer for Petrokaravon rocks and pass them at a prudent distance on either side; then bring the westernmost of these rocks to bear about  $26^\circ$  true and in line with Cape Andonis, which will lead up to the entrance of Port Pogon.



Dana point lighthouse.

*Plan 1517, Poros island.*

Platia islet, which is low, will be seen on the port hand. From the southward, after passing Platia, bring the above marks on.

At night, the light on Point Dana will be seen, and a vessel may anchor where convenient, either in Port Pogon or Poros harbour.

**Measured mile beacons.**—On the north shore, close to the extremity of a projecting point  $4\frac{1}{2}$  cables westward of the dockyard, are two obelisks close together, the one painted brown and the other white.

At  $1\frac{1}{2}$  cables northward from Dhascalía island is another obelisk, painted white, distant one mile from the above pair. The course on the range is  $300^\circ$  and  $120^\circ$  true, the depth being from 8 to 16 fathoms.

*Chart 1514, Ægina and Methana.*

**Petrokaravon or Petro Kargo** (Lat.  $37^\circ 37'$  N., Long.  $23^\circ 29'$  E.).—Two and a half miles north-north-westward of Platia island is a group of ten rocks above water, the largest being about 50 feet high, and extending over a space of about a third of a mile. These rocks, named Petrokaravon, are easily seen, steep-to, and without known dangers, below water.

*General charts 1525, 1514, 1657, 2836a, 1800.*

*Chart 1514, Ægina and Methana. Var. 3° 40' W.*

**METHANA PENINSULA** is 5 miles in extent north and south, the northern part being of the same breadth east and west, whence it tapers to the south. Mount Khelona, an extinct volcano  
5 near the centre, rises to the height of 2,430 feet. On the peninsula are several villages, and on its south-western side the Acropolis and ruins of Methana. The shores are rocky, and here and there the rocks extend a little distance off, but the water is everywhere deep at the distance of half a mile. It is joined to the mainland on the south by  
10 Steno isthmus, narrow, rocky, and formerly well fortified, the central part of which is 254 feet above the sea.

*Plan 1517, Poros island.*

**Port Steno**,  $2\frac{3}{4}$  miles west-north-westward of the North entrance to Port Pogon, is a small indentation formed between the coast of the  
15 peninsula and the north-east side of the isthmus. The port runs in about half a mile to the north-westward, and is available only for small vessels; the holding ground is indifferent, being chiefly loose fragments of volcanic remains.

*Chart 1514, Ægina and Methana.*

20 Methana peninsula forms, with the mainland coast on the west, a large bay running 5 miles south-eastward, with deep water all over it. The high mountainous land around subjects the bay to heavy squalls when there is any wind. Mount Ortholithi, on the mainland, rises 3,638 feet above the sea, at about 2 miles from the western shore of the  
25 bay. There are one or two runs of fresh water on the western shore, but no anchorage.

**Communication.**—The steamer calling at Poros occasionally stops off the village of Vromo on the south-east side of Methana peninsula.

30 The village of Methana, on the south-west side, is a telegraph station.

*Plan of Port Epidavro on 1816.*

**PORT EPIDAVRO** (*Lat. 37° 38' N., Long. 23° 10' E.*).—At about  $6\frac{1}{2}$  miles westward of Methana peninsula is the port of Epidavro, the approach between Klephti and Kalamaki points,  $4\frac{1}{2}$  cables  
35 apart, being open to the eastward. The space for anchoring near the head of the port is about 2 cables in extent, and 2 to  $3\frac{1}{2}$  fathoms deep; ledges of rocks, with  $1\frac{1}{4}$  fathoms water on them, extend from both of the inner points of entrance, leaving between a passage about 40 yards wide into the port, which is only fit for small vessels. The  
40 leading mark through the passage is Kalamaki point, on the northern side of the approach to the port, in line with the saddle of Angistri island, bearing 66° true. See views on plan 1816 and chart 1514.

The southern shore of the port is formed by a rocky peninsula, on

*General charts 1514, 1657, 2836a, 1800.*

*Plan of Port Epidavro on 1816. Var.  $3^{\circ} 40'$  W.*

which are the ruins of *Epidaurus*, but the little modern village of Epidavro is on the north-western shore of the port, and in 1896 contained 541 inhabitants. The land in the vicinity is highly cultivated and productive, vegetables being raised here for the Athenian market. 5  
From Epidavro to Nauplia by carriage road is about 24 statute miles.

About 5 miles inland are the ruins of the precinct sacred to Asclepios, who is said to have been born here; a theatre is still in a wonderful state of preservation.

Epidavro acquired celebrity by giving its name to the constitution, 10  
adopted by a General Congress of Deputies from all parts of Greece, and promulgated on the 1st January 1822. The first Greek Assembly met at Piadha, 3 miles north-westward.

**Communication** with Piræus is made by means of sailing boat to Ægina, and thence by daily steamer to Piræus. 15

**Agios Lassi bay.**—The peninsula of Epidaurus forms also the northern shore of Agios Lassi bay; the cliffs of the peninsula are steep-to, but a low shore trends at a right angle to the southward, and for two-thirds of a mile is bordered by a shallow shingle bank, which extends  $1\frac{1}{2}$  cables from a point a third of a mile from the cliffs, with 20  
3 to  $3\frac{1}{2}$  fathoms of water on its edge, and depths of 10 and 13 fathoms immediately outside it.

**Temporary anchorage.**—In the event of having to communicate with Epidavro, there is temporary limited anchorage in fine weather during summer, in the north-western corner of Agios Lassi bay. 25  
The water is deep, and the anchor should be dropped about  $1\frac{1}{4}$  cables southward of the cliffs, and a quarter of a mile from the shore on the west; the soundings are from 13 to 20 fathoms, sandy bottom. Should an easterly wind set in, a vessel should leave the anchorage.

*Chart 1514, Ægina and Methana.*

**Coast.**—At  $4\frac{1}{4}$  miles northward of Port Epidavro is Cape Trakhyli, with an islet of the same name close to it; the coast between falls a mile back westward to Piadha bay, the town or village of which name, with a population in 1896 of 1,089, and the old Venetian fortress, are on the hill nearly a mile inland. 35

**Port Sophiko** (*Lat.  $37^{\circ} 45'$  N., Long.  $23^{\circ} 08'$  E.*).—Cape Trakhyli is the southern point of entrance to a deep bight, at the head of which,  $3\frac{1}{2}$  miles north-westward of the cape, is the little port of Sophiko, used by small vessels. The bottom here is mostly loose gravel, and the port being under high land, the winds are always 40  
baffling, so that it is difficult for a square-rigged vessel to get in or out.

*General charts 1514, 1657, 2836a, 1800.*

*Chart 1514, Ægina and Methana. Var. 3° 40' W.*

**Submarine spring.**—In the deep bight which leads to this little port there is a spring of fresh water rising about a quarter of a mile from the shore from a depth of 7 fathoms, with deeper soundings  
5 around it; a light air is sufficient to mix the fresh and sea water.

*Chart 1513, Athens to the Isthmus of Corinth.*

**Coast.**—At a mile eastward of Port Sophiko is a small projection called Cape Traili; it is surrounded by rocks, some of which are above water, and steep-to. A mile eastward from Cape Traili and 4 cables  
10 from the shore, is Petro-nisi with a clear deep channel inside it; the coast hence trends north and north-west as far as Port Franco, a distance of about  $6\frac{1}{2}$  miles. Hevræo island, which lies about a mile to the north-eastward of Port Franco, is bluff, about half a mile in length, and bears evidence of having once been fortified. Platia islet  
15 lies  $2\frac{1}{2}$  miles westward of Hevræo, and 4 miles beyond it is the beach of Kekhries bay. The shore all round this part of the coast is rugged with deep water, excepting Kekhries beach.

**Kekhries beach** is steep-to, and in anchoring here a berth should be taken close in, as the land wind in summer is so fresh that  
20 the anchor is liable to drag suddenly into deep water. At about  $2\frac{1}{2}$  miles northward of Kekhries is Kalamaki bay (*see page 138*).

*Chart 1514, Ægina and Methana.*

**ÆGINA ISLAND** is somewhat triangular in form, its sides being about 7 miles in length, and its northern side running east and  
25 west. It is generally hilly, the hills for the most part being barren, though the valleys and plains, particularly in the western part, are fertile. Mount Oros, commonly called the peak of Ægina, near the southern end, rises 1,752 feet. Ægina enjoys a delightful climate, the atmosphere being pure, and fevers almost unknown. It produces  
30 corn, cotton, wine, olives, figs, almonds, &c., and in 1896 had a population of 8,231.

Ægina was anciently celebrated for the splendour of its buildings, but the only remains are those of some tombs, vestiges of wells, a column of a temple of Venus, some moles of its harbours, and the  
35 columns of a temple supposed at one time to have been that of Jupiter Panhellenius but now said to be that of Athene. The latter ruins stand on an elevation 578 feet above the sea, near the north-eastern part of the island, and its 22 remaining columns are conspicuous from seaward.

**East coast.**—From Cape Pyrgos (*Lat. 37° 40' N., Long. 23° 29' E.*), the southern extreme of Ægina, the coast, which is in general irregular and cliffy, with little bays, trends east-north-eastward for  $2\frac{1}{2}$  miles to Cape Andonis; both these capes are surrounded by shoal water and

*General charts 1513, 1657, 1600, 2836a, 1800.*

*Chart 1514, Ægina and Methana. Var. 3° 40' W.*

should not be approached too near. From Cape Andonis the coast trends north-north-eastward for 5 miles to Cape Turlo, the north-east point of the island.

**Agia Marina bay**, 3 miles north-north-eastward from Cape Andonis, affords temporary anchorage during fine weather, in any convenient depth, sand and weeds. This is a convenient place for visiting the temple of Jupiter; donkeys may be obtained if required.

Cape Turlo, the north-eastern point of Ægina, is cliffy on the east face, and the shore for half a mile southward is bordered by rocks above water, sunken and awash, to a distance of nearly 2 cables; one of these rocks at a distance has the appearance of a boat under sail.

**North coast.**—About two-thirds of a mile westward of Cape Turlo is Nisida, a small islet connected with the shore by rocks; both Cape Turlo and Nisida are surrounded by rocks and should be given a wide berth. The coast to the westward is nearly straight for 7 miles to Cape Plakas, with an irregular outline, here and there skirted by rocks, but all along the water is deep at the distance of half a mile.

**Cape Plakas (Plakakia)**, the north-western extreme of Ægina, is beset with rocks which extend upwards of a cable from it and are steep-to.

**LIGHT** (*Lat. 37° 46' N., Long. 23° 25' E.*).—Near the extremity of Cape Plakas a light is shown, at an elevation of 36 feet, from a circular masonry tower, 20 feet in height, painted in red and white vertical stripes.

**West coast.**—From Cape Pyrgos, the south extreme of the island (*see page 120*), the coast trends north-westward about  $1\frac{3}{4}$  miles to Perdika point, on the north side of which is a cove about  $2\frac{1}{2}$  cables deep, with 4 fathoms in the middle. The north point of this cove is the south point of Marathona bay, and from it Palaio Pyrgos point, the north extreme of that bay, is distant  $2\frac{1}{4}$  miles to the north-north-westward, and the coast then trends  $2\frac{1}{4}$  miles in the same direction to Cape Plakas.

The coast from Palaio Pyrgos point to Cape Plakas is bordered by a bank, and detached rocky patches, generally with 8 or 9 feet, but in places less water on them, extend 8 cables westward from Palaio Pyrgos point and skirt the shore northward extending 2 and 3 cables from it, past the town of Ægina, to a position nearly 2 cables north-westward of the bluff of Cape Skendiriotti, which may be known by the pillar of the temple of Venus on its summit.

**Moni island**, a mile in length, is 571 feet high; between it and Perdika point, the south-west point of Ægina, is a narrow channel named Moni pass, with depths of 15 to 20 fathoms, but which should

*General charts 1513, 1657, 2836a, 1800.*

*Chart 1514, Ægina and Methana. Var. 3° 40' W.*

not be taken unless under steam, or with a strong sea breeze, as the winds are always baffling under Mount Oros, and the points of Ægina should be given a wide berth.

- 5 **LIGHT.**—A light is exhibited, at an elevation of 75 feet, from a white iron tower over a white house, 21 feet high, on the south-west extreme of Moni island.

**Angistri island** (*Lat. 37° 41' N., Long. 23° 21' E.*), situated 2½ miles westward of Moni island, with, in 1896, a population of 713, is nearly 3 miles in length north-east and south-west, the extreme breadth nearly 2 miles, and its greatest elevation 709 feet. Its southern part is clear all round, but the northern part is surrounded by shallow ground connecting it to Metopi island on the north-east; Angistri pass, the narrow channel between, is 3 fathoms deep.

- 15 Thorussa island off its south-western point is rocky; the channel between with depths of from 7 to 19 fathoms is only 1½ cables wide.

**Kyra islet**, 9 cables in length, lies about 2½ miles westward of Angistri, and two-thirds of a mile westward of Kyra islet is Salaphtonisi, both being steep to a cable from the shore; the passages between Angistri and Kyra, and between Kyra and Salaphtonisi, are clear and deep.

**Methana channel.**—The passage between Ægina, with the above islands on the north, and the Methana peninsula with Petrokaravon rocks on the south, is called Methana channel; it is everywhere deep and clear, and the shores may be approached within a reasonable distance. See view A on chart 1,514.

**Vathi channel**, between Angistri and Moni islands, is everywhere deep and clear; there is generally a light steady breeze in it, and it is the best channel to Marathona bay.

- 30 **MARATHONA BAY.**—This bay, southward of the port and town of Ægina, is sheltered from the west and north-west by Angistri and Metopi islands and shoals, and from the southward by Moni island. In the northern part, there is spacious and excellent anchorage in from 10 to 19 fathoms water, mud or sand, and good holding ground. A fair berth for a heavy ship is in 19 fathoms, with Palaio Pyrgos point 327° true, Cape Skilomango (Angistri island), 244° true, and the north-western point of Moni island about 212° true; smaller vessels may anchor farther northward. The shore of Marathona bay is skirted by rocks and shallow water, which off Palaio Pyrgos point extend more than three-quarters of a mile westward. See page 121.

**Metopi channel.**—Metopi island is surrounded by shallow ground which extends a mile eastward, leaving between it and the shoal water from Palaio Pyrgos point, a passage 4 cables wide and 5 to

*General charts 1513, 1657, 2836a, 1800.*

*Chart 1514, Ægina and Methana. Var. 3° 40' W.*

6 fathoms deep. The north-eastern extreme of Hypsili islet bearing 322° true and in line with the gap of Mount Geraneia, leads through the passage which is called Metopi channel; Perdika point bearing 142° true, and just open north-east of Moni island, also leads through the channel. See views C and D on chart 1514. 5

*Plan of the town and port of Ægina on 1816.*

**Town and port of Ægina** (*Lat. 37° 45' N., Long. 23° 26' E.*).

—The town and capital of Ægina, on the north-western side of the island, is irregularly built, but has some good houses, an orphan asylum, schools, museum, library, lazaretto, &c. In its vicinity are the remains of ancient moles, and fragments of a temple of Venus. The population in 1896 was 4,851. 10

The little port of Ægina is formed by two moles, a modern and an ancient one, enclosing a small area about 1½ cables by one cable in extent, with from 2 to 9 feet water, and open to the south-west. To the northward of this little port, and facing the lazaretto, are two other small detached moles, sheltering a cove within, which has 6 to 8 feet water. 15



*Lazaretto, bearing 51° true.*

*Lighthouse, bearing 81° true.*

Town and Port of Ægina from the anchorage.

**LIGHTS** are shown from the heads of the north and south-east moles, respectively, at Ægina. 20

**Communication.**—There is daily steamboat communication with Piræus, to which also a telegraph cable is laid.

*Chart 1514, Ægina and Methana.*

**Eleúsa isles.**—The Eleúsa isles form a group of five small islets lying close together, nearly 2½ miles northward of Ægina; shoal water does not extend from them more than a cable, excepting at the eastern extremity of the eastern and largest islet, whence a bank with 3½ fathoms on it makes off 3 cables in an easterly direction. These islets are the easternmost of a chain extending over a space of 11½ miles in an east and west direction, separated from each other by deep channels, and generally steep-to. 25 30

**Platia, Staktoroya, Hypsili islets.**—At 2¾ miles westward of the Eleúsa group is Platia islet, from which a shoal extends a cable to the southward; it lies 3¼ miles north-north-westward of Cape Plakas. Staktoroya and Hypsili, the two next islets westward of 35

*General charts 1513, 1514, 1657, 2836a, 1800.*



*Chart 1514, Ægina and Methana. Var. 3° 30' W.*

Platia, are steep-to. Hypsili, 424 feet high, is the highest of the whole chain, and has three small islets on its western side.

**Diaporii** is the name given to the principal islets of the western-  
5 most group of this chain; they are Agios Ioannis, Agios Thoma, and Trago-nisi, respectively 254, 137, and 253 feet high; these three islets are close together, and there is no ship passage between them. Three little islets are scattered from about a quarter of a mile to a mile eastward of them.

10 **Shoals.**—Between the eastern end of Agios Ioannis and Molathi (the eastern of the little islets above mentioned), are two shoals; that a quarter of a mile from Agios Ioannis has 3 feet water on it, and the other about the same distance from Molathi,  $4\frac{1}{2}$  fathoms, with deep water around. There is nothing to invite a vessel near these dangers.

15 *Plan of Mandri channel on 1526.*

**CAPE SUNION** or **COLONNA** (*Lat. 37° 39' N., Long. 24° 02' E.*).—The promontory of Sunion, better known by the modern name of Cape Colonna, from the ruins of the temple of Minerva on its summit close over the sea,\* is the north-eastern entrance  
20 point to the Gulf of Athens. (See page 113.) The hills in the interior are in the silver mine district of Sunion, and at 6 miles inland is Mount Korphona, 1,230 feet high.

**Port Colonna.**—The little bay called Port Colonna, on the western side of the cape, affords accommodation for one or two small  
25 vessels during northerly winds; the depths are from 8 to 3 fathoms, and the bottom coarse sand and fair holding ground. During off-shore winds, hematite iron ore is loaded by steamers from an iron pier 125 feet long, erected on the east side of the port.

**Legrana bay**, between Cape Sunion and Gaidaro nisos, 3 miles  
30 to the westward, may be easily known by its sandy beach. This is a good stopping place, and frequently resorted to when strong winds from the northward or north-east, combined with a southerly current, render the passage for sailing vessels through Zea and Doro channels impracticable. The anchorage is in any convenient depth,  
35 sand and weed.

On the west side of the bay, sunken rocks extend about a cable south-south-eastward from a point situated  $2\frac{1}{4}$  cables north-eastward of the west entrance point; the depth close outside the rocks is 3 fathoms.

*Chart 1657, Gulf of Athens.*

40 **Gaidaro nisos** or **Patroclos**, 3 miles westward of Cape Sunion, is  $1\frac{1}{2}$  miles in length, east and west, by about three-quarters of a mile in breadth, 820 feet high, and uninhabited; a few partridges and quail

\* The temple, of which twelve Doric columns of white marble still remain, was part of a strong fortification, and the walls are still traceable in nearly all its circuit (which is more than half a mile long), except in parts where the steep cliffs needed no defence.

*General charts 1657, 2836a, 1800.*

*Chart 1657, Gulf of Athens. Var. 3° 30' W.*

may be shot, and there is good seining in the sandy coves on its north-eastern coast. The island is separated from the mainland by a passage with a depth of 6 fathoms, and rather more than half a mile wide; its northern side is bordered by a bank, and nearly midway between the eastern part of the island and the main is Medina rock with 3 feet water on it. The point of the mainland at the eastern entrance of the passage is foul. Mount Agios Elias rises 1,195 feet above the sea, 2¼ miles northward of this point. 5

In October, 1878, good anchorage, muddy sand and weed, was found, with the south-east extreme of Gaidaro nisos about 153° true, and the north-west extreme of the island 248° true. 10

**Port Agios Nikolo** (*Lat. 37° 43' N., Long. 23° 56' E.*).—At 3½ miles north-north-westward of Gaidaro nisos is Arsida island (ancient *Eleusa*), situated about 3 cables from the shore, and about one mile eastward of Arsida island is Port Agios Nikolo, with salt works at its head; it is fit for small vessels during summer, but being open to the southward and south-westward is not safe in winter. 15

**MOUNT HYMETTUS.**—The highest part of the Hymettus range, Trelo Vuni, is 3,360 feet above the sea, and 2½ miles to the southward is Mavro Vuni, 2,560 feet high; thence the range declines in height to Cape Zervi, the southern termination, 9¼ miles from Trelo Vuni. A mountainous district trends to the south-east from the southern part of Hymettus to Mount Korphona (ancient *Laurium*), which terminates at Cape Sunion, and the western slopes of the heights bound the north-eastern side of the Gulf of Athens. 20 25

**Cape Zervi** (ancient *Zoster*), the southern termination of Mount Hymettus, is 7¼ miles north-westward of Arsida island, and the bight between them is encumbered with shoals and rocks covered and uncovered, with a coast line broken by several rocky points; it is therefore advisable not to pass within the line joining the cape and island just mentioned. Mount Olymbos, 1,610 feet high, is about 1½ miles inland from the south-eastern part of the bight. 30

**Vari bay**, on the eastern side of Cape Zervi, is about three-quarters of a mile deep, with a beach at its head, and sheltered from the westward by the land of the cape, but completely exposed from the southward. A vessel might, however, anchor here for any temporary purpose under favourable circumstances during summer. 35

**Vuliasmeni bay** (*Lat. 37° 48' N., Long. 23° 47' E.*).—Nearly 2 miles north-westward from Cape Zervi is Kavura point, the termination of a narrow projection extending westward, with a round rock close to it; and between these points is the peninsula of Lombarda, united to the coast by a sandy neck, and having a large rock above water off its southern end. Lombarda peninsula forms the western 40

*General chart 2836a.*

*Chart 1657, Gulf of Athens. Var. 3° 30' W.*

side of Vuliasmeni bay, which has a beach at its head, is open to the southward, and fit only for small vessels during summer.

**PHLEVA ISLAND** (ancient *Phaura*), 244 feet high, is one mile in length north and south, with an irregular coast line, and an islet or rock at its southern end, and another close to its northern end. The passage between the latter and the rock off the extreme of Lombarda peninsula is three-quarters of a mile wide, deep and clear.

**LIGHT.**—A light is shown at an elevation of 266 feet from a square masonry tower in the centre of a dwelling, 21 feet high, on the summit of Phleva island.

*Charts 1513, 1657.*

**Praso nisi** (ancient *Hydrusa*) lies half a mile off-shore, to which it is connected by a  $2\frac{1}{2}$  fathoms ridge. In the bay between Kavura point and Aliki point, nearly  $2\frac{1}{2}$  miles to the north-north-westward, the bottom is very uneven and it is not recommended.

*Chart 1513, Athens to the Isthmus of Corinth.*

**Aliki rocks**, upon which the sea always breaks, lie nearly two-thirds of a mile south-westward of Aliki point, and nearly the same distance from Praso nisi. There are 10 fathoms water close outside, and 7 fathoms between them and the shore. The rocks are resorted to during summer for sponges.

**Port Aliki** (Lat.  $37^{\circ} 51' N.$ , Long.  $23^{\circ} 45' E.$ ).—This little bay, about three-quarters of a mile north-eastward of Aliki point, has about 2 fathoms water, and is fit only for small coasters during southerly winds. During fine weather in summer there is temporary anchorage off the port, in any convenient depth, sandy bottom and fair holding ground.

**The coast** between Port Aliki and Phalerum bay, about  $5\frac{1}{2}$  miles to the north-westward, is irregular, rocky, and bordered by shallow water, which under the depth of 3 fathoms extends in several places 3 and 4 cables from the shore.

**Kosma point** is situated 3 miles to the north-north-westward of Aliki point, and Cape Colias  $2\frac{1}{2}$  miles beyond in the same direction.

A patch with 2 fathoms on it lies two-thirds of a mile southward from Kosma point, and nearly half a mile off-shore. A rock with 5 feet on it lies at a distance of about  $2\frac{3}{4}$  cables west-south-west from the south-west extreme of Kosma point.

Vessels cruising along this shore should give it a wide berth, and pay attention to the lead.

*Plan 1520, The Piræus and Phalerum bay.*

**PHALERUM BAY** (Lat.  $37^{\circ} 56' N.$ , Long.  $23^{\circ} 41' E.$ ).—Stalida islet on the south side of Port Castela, situated near the inner

*General charts 1513, 1657, 2836a.*

*Plan 1520, The Piræus and Phalerum bay. Var. 3° 30' W.*

end of the eastern side of the Piræus peninsula, bears 280° true about 1½ miles from Cape Colias, and between them lies Phalerum bay, in the western part of which is the town of Phalerum, and the Actæon hotel, a large building with a dome. The town is in communication by rail with the Piræus and Athens, and a large number of persons resort here for the purpose of bathing in the summer. *See view at page 128.*

**Landmarks.**—In addition to the hotel above mentioned, the following buildings are conspicuous:—A pink house on the 262 feet hill north-westward of Port Castela ; two chimneys, each 213 feet high, belonging to the Hellenic Paper Factory, at the back of Phalerum, and a conspicuous white house near the shore about midway between Kosma point and Cape Colias.

**Port Castela** (ancient *Munyehia*) is a small harbour, nearly circular, about 1½ by 1¼ cables in extent, situated on the west side of Phalerum bay. Its entrance is between two small peninsulas, the northern of which extends southward and is prolonged for 80 yards by a reef, with a rock above water near its extremity (*see Lights*) ; a reef also extends 90 yards north-eastward from the southern peninsula, narrowing the entrance to about 40 yards. The depth in the entrance is 29 feet, and from 7 to 19 feet within until from 50 to 100 yards from the shore, where the depth is less than 6 feet.

On the west side of the port is a stone pier about 100 feet long ; the plan shows other piers on the north-west side.

**LIGHTS.**—A light is shown from a red beacon 15 feet in height, 2¼ cables 105° true from the extremity of the landing pier at Phalerum and about 2 cables from the beach southward of the Actæon Hotel. This beacon marks the outfall from the condensing station.

A light is shown from an iron staff 13 feet high erected on a rock on the north side of the entrance to Port Castela (*Lat. 37° 56' N., Long. 23° 40' E.*) on the western side of Phalerum bay.

**Piers.**—The landing pier is situated at the western end of Phalerum bay about 2 cables westward of the Actæon Hotel, and there is a bathing pier on each side of it. At about 8½ cables eastward of the landing pier is a landing stage abreast the tramway to Athens.

**Bank.**—A bank with 45 feet least water on it lies 217° true, about 1½ miles from Cape Colias.

**Anchorage.**—Depths of less than 18 feet will be found within about a quarter of a mile of the head of Phalerum bay. The best anchorage is reported to be 181° true, distant 8 cables from the Actæon Hotel, in about 72 feet. To the eastward the ground is reported to be hard and the ship may drag. A fair berth is in 54 feet (plan shows 59 feet), with the rock at the entrance of Port Castela

*General charts 1513, 1657, 2836a.*

*Plan 1520, The Piræus and Phalerum bay. Var. 3° 30' W.*

bearing about 293° true, distant a little over half a mile. Small vessels anchor farther northward in 33 or 36 feet.

**Summer anchorage.**—Vessels of war anchoring in Phalerum bay in summer will escape the heat and the unpleasant smells of the Piræus.

**Provisions** are obtainable at reasonable prices.

**Telegraph.**—Phalerum is a telegraph station.

**Port Passalimani** (*Lat. 37° 56' N., Long. 23° 39' E.*) (ancient *Zea*), situated on the eastern side of the Piræus peninsula, is nearly circular and about  $2\frac{1}{4}$  cables in diameter; the entrance channel is about one cable long north and south, with a least width of half a cable, and depths of from 29 to 10 feet; within, the port has depths of from 5 to 12 feet, but dredging is in progress. During the summer months, vessels may anchor off this port in about 84 feet water, sand and mud, with the south peak of Salamis, Mount Konkhi, open, bearing about 256° true; entrance to the port 338° true; and Stalida islet 32° true, distant half a mile. A small vessel may anchor a little farther in; the bottom is sand, mud, and weed.

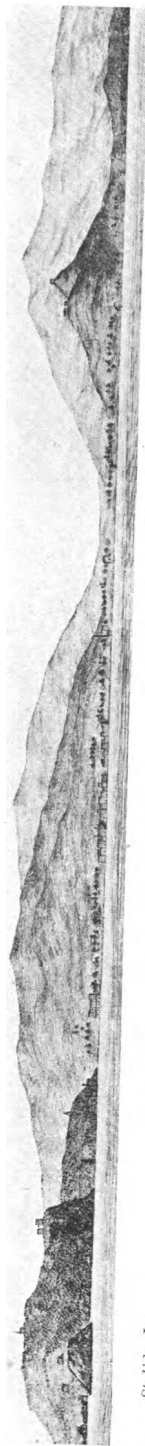
**Cape Themistocles**,  $7\frac{1}{2}$  miles north-westward of Alikí point, is the most westerly projection of the promontory upon which the Piræus stands, and which extends about 2 miles to the west-south-westward from the head of Phalerum bay. The 5-fathoms line rounds the cape at the distance of three-quarters of a cable. A large orphan asylum, very conspicuous from seaward, is situated on the heights above Cape Themistocles.

**The PIRÆUS or PORT DRAKO** consists of two harbours and an inner basin known as the outer and inner harbours, and the ancient Cantharus or Halon Basin, the whole being enclosed between the peninsula on the western side of Phalerum bay and the mainland to the westward.

**Breakwaters.**—The Cara Krakari or Roi Georges breakwater, on the northern side of the entrance to the Piræus, extends from Cara Krakari for about 220 yards in a southerly direction, when it turns to the south-eastward for 100 yards. The Themistocles breakwater on the south side of the entrance leaves Cape Themistocles in a westerly direction for 140 yards, when it turns to the north-westward for a further 260 yards, ending at a point about 290 yards 190° true from the outer extreme of Cara Krakari breakwater. The Themistocles breakwater has been damaged by the sea and shows a gap at the bend; the extremity should not be approached too closely.

**LIGHTS** (*Lat. 37° 56' N., Long. 23° 38' E.*).—Two lights placed vertically, elevated 30 feet, are shown from an iron column 25 feet

*General charts 894, 1513, 1657, 2836a, 1800.*

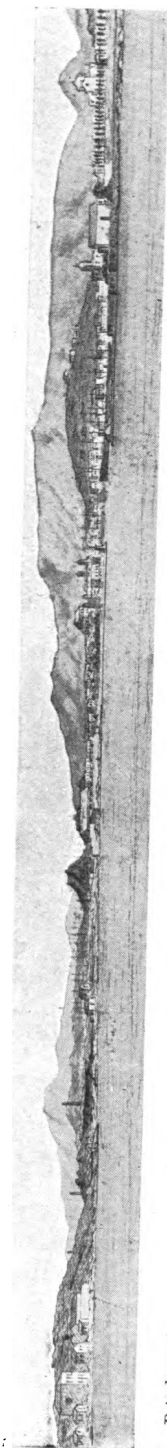


*Stalida I.*

*Casino. Phaderum.*

View of Phalerum bay from a position 1 1/2 miles southward of the Casino.

*Cape Colias.*



*Petroleum store.*

*Acropolis.*

View of the entrance to Inner harbour, Piræus.

*Harbour entrance.*

*Mount Hymettus.*



*Plan 1520, The Piræus and Phalerum bay. Var. 3° 30' W.*

high with an iron hut attached, situated on the head of Cara Krakari breakwater at the northern side of the entrance to the Piræus outer harbour.

Two lights, placed vertically, the upper elevated 30 feet, 5  
are also shown from an iron column 25 feet high, with an iron hut attached, situated about 22 yards within the extremity of the Themistocles breakwater on the south side of the entrance.

Vessels should pass at least 45 yards from this light to avoid the 10  
end of Themistocles breakwater.

A light is shown from a beacon consisting of a pillar on a square stone base, near the southern end of the spit, extending southward from the northern entrance point of the inner harbour.

A light is shown from a square white tower 18 feet high, situated 15  
on the head of the mole which forms the southern entrance point of the inner harbour.

**The outer harbour** lies between the Cara Krakari and Themistocles breakwaters and the entrance points to the inner harbour, about  $4\frac{3}{4}$  cables to the north-eastward. The least width of the harbour is about 2 cables, and there are depths of from 30 to 90 20  
feet all through the central part over a width of  $1\frac{1}{2}$  cables. On the north side, Basiliades dockyard is situated just within Cara Krakari breakwater; eastward of it are coal and petroleum stores, and in the north-east corner the dry docks, the approach to which has been dredged to  $29\frac{1}{2}$  feet. On the south-east side, between Themistocles 25  
breakwater and the entrance to the inner harbour, the 5-fathoms line is about three-quarters of a cable from the shore, except westward of Cape Miaulis, where it is about half that distance.

**Spit.**—A spit extends for about 80 yards southward of the northern entrance point to the inner harbour; part of it shows above 30  
water, and the light standard is near the outer end of this spit, as before mentioned.

**The inner harbour\* or Port Drako** (*Lat. 37° 56' N., Long. 23° 39' E.*), is a landlocked basin surrounded by quays, the entrance being about 210 yards wide between the light-tower on the 35  
mole westward of the South quay and the light station on the end of the spit extending from the point on the northern shore  $4\frac{3}{4}$  cables eastward of Cara Krakari. Depths under 30 feet extend for 60 yards north-eastward from the angle of the South quay, about 220 yards eastward from the south entrance point of the harbour, leaving a 40  
channel between them and the above mentioned spit on the north side of the entrance, with a breadth of about 130 yards and a depth of not less than 30 feet.

\* The Piræus or harbour of Athens is also called Porto Leone, from the colossal marble lions which once crowned the two pillars forming the entrance, and which were about 72 yards apart.

*General charts 894, 1513, 1657, 2836a, 1800.*



*Plan 1520, The Piræus and Phalerum bay. Var. 3° 30' W.*

The port has anchoring space, limited to about  $4\frac{1}{2}$  cables north-east and south-west by a little more than  $2\frac{1}{2}$  cables in a transverse direction, consequently it is necessary for vessels to moor, but it is  
5 advisable to have only about 35 fathoms of cable each way, and open hawse to the northward, the strongest winds being from that quarter.

Large ships moor with their sterns secured to, and distant about 80 yards from the South quay wall, where at about every 10 yards are large iron rings, to which the quarter hawsers or cables are secured,  
10 the bower anchors being well apart to the northward. Heavy draught war vessels should, if possible, communicate beforehand by telegram or otherwise with the Captain of the Port, as to the proposed arrival of the ship when he will, if possible, clear a berth. Merchant vessels generally moor with their sterns to the shore, and along both sides of  
15 the port are stone bollards, iron bars, or shackles for this purpose, but not strong enough for heavy vessels of war. The head gear should be ready to be run in at any moment. The port is generally full of shipping, amongst which are often several men-of-war of different nations, and it is necessary to avoid overlaying the cables. The  
20 centre of the harbour is kept clear. See view at page 128 and on plan.

The north-west side of the harbour is bordered by coal wharves, near the south-west end of which is a stone pier about 70 yards long, with a depth of 34 feet at the end. The south-east and south sides are bordered by quays. In the middle of the south-east side a large  
25 timber and grain wharf extends 150 yards into the harbour, and south-westward of it are the Health and Harbour master's offices and the Customs house. The landing steps are north-eastward of the timber wharf, under the clock tower. On the south side Alkimon mole projects 70 yards from the eastern end of South (Alkimon) quay,  
30 and between it and the Custom house is Kantharos or Kophos harbour, a bight with from 22 to 8 feet of water.

**Depths.**—The depths in the inner harbour vary from 21 feet, in the north-east part, to between 40 and 50 in the south-western portion. The depths at the mooring berths are very uneven, consequently a  
35 berth with a depth considerably in excess of the draught of the ship should be taken. Alongside the South quay there is, at places, a depth of only one foot. Dredging operations are in progress to deepen and improve the harbour.

**The inner basin** (ancient *Cantharus*) (Lat.  $37^{\circ} 57' N.$ ,  
40 Long.  $23^{\circ} 39' E.$ ) is generally crowded with small craft; it is being much improved and deepened by dredging; at present it has depths of from 8 to 15 feet. Its dimensions are about 520 yards long east and west by about 300 yards; an iron wharf extends 80 yards from the centre of the north side, and the entrance is 140 yards wide, with  
45 a depth of 15 feet.

*General charts 894, 1513, 1657, 2836a, 1800.*

*Charts 1513, 1657. Var. 3° 30' W.*

**DIRECTIONS.**—In approaching the Piræus, the high land of Mount Ortholithi, 3,638 feet high, Mount Khelona, 2,430 feet, on the Methana peninsula north-eastward of it, and farther on in the same direction, Mount Oros or the peak of Ægina, will all be seen to the westward. As the latter peak is brought to the south-west and southward, Mount Khelona will appear above it, which will again be overtopped by Mount Ortholithi; whilst to the north-eastward of the peak of Ægina will be seen the lofty summits of Hymettus. These elevated heights rise nearly 47° and 227° true from each other.

Special directions for the Piræus are almost unnecessary, the chart being a sufficient guide. From the southward the peak of Agios Georgio island, Mount Oros or peak of Ægina, and Mount Agios Elias (Cape Sunion), being near marks, will each be easily recognised. In running up the gulf, when abreast of Ægina, the land of the Piræus will appear like an island with white and reddish cliffs, and a windmill situated on the hill, 195 feet high, with the flagstaff on it, immediately over the port. The Acropolis and buildings about Athens will be seen on the east, and the lighthouse on Lipso island on the west, which will indicate the entrance to the port (*Lat. 37° 56' N., Long. 23° 38' E.*).

*Plan 1520, The Piræus and Phalerum bay.*

As the Piræus is generally crowded with shipping, it would be prudent in a heavy ship to send a boat in, to mark with buoys the position for the anchors before entering, if arrangements have not already been made with the Captain of the Port to clear a berth (*see page 130*). The entrance between Themistocles and Cara Krakari breakwaters is about 1½ miles eastward of Lipso island lighthouse; thence to the narrows it runs in half a mile, and in large vessels under sail, unless with a fair wind, the port is difficult of access, the channel at the entrance to the inner harbour being narrow, and with a southerly wind it is necessary to haul up southward of East.

**At night**, the light on Lipso island on the west, and the lights on the ends of the breakwaters will denote the entrance.

**Caution.**—From the crowded state of the shipping in the Piræus, it would be well to consider as to the advisability of vessels of war remaining for any length of time in the port, unless in cases of necessity, or during the winter months, as it receives the whole of the drainage from the town, which is increasing in size, and there is no tide and but a small outlet; in summer bad cases of fever occur.

**Pilotage** is not compulsory.

**Docks and patent slip.**—*See Appendix I., page 498.*

**Harbour works.**—Extensive works, consisting of quays and three piers, are in course of construction on the north-eastern shore

*General charts 89½, 1513, 1657, 2836a, 1800.*

*Plan 1520, The Piræus and Phalerum bay. Var. 3° 30' W.*

of the outer harbour, and the north entrance point of the inner harbour is being surrounded by a quay. Dredging operations are in progress for the purpose of deepening and improving the harbour.

5     **The town** (*Lat. 37° 56' N., Long. 23° 39' E.*), along the north-eastern side of the Piræus, is well laid out, extending and rapidly rising in importance; the population in 1907 was 73,579, and of Athens, 167,479; but in 1914 they were estimated to have increased to 100,000 and 250,000 respectively.

10    The health of the town is not good, and owing to the primitive system of drainage, and to lack of efficient water supply, typhoid fever, phthisis, and meningitis are prevalent.

**Industries, Trade.**—Several cotton, cloth, chair, soap, and dyeing factories are in active operation, also flour mills, distilleries, and iron foundries, besides many others. The principal articles imported are coal, coke, grain, textiles, machinery, timber, oleaginous products, chemical manures, metals and wire, chemicals and medicines, carriages, wagons, motors, &c., live-stock, eggs, dried fish, and groceries. The chief exports are agricultural products, olive oil, minerals and ores, wines, spirits, tobacco, &c.

**Shipping.**—During the year 1914, 3,768 steam vessels, with an aggregate tonnage of 4,043,967 tons entered in the foreign trade of the port of Piræus, with cargo, and 21 vessels with a tonnage of 37,179 tons in ballast; of the above, 178 vessels, of 352,213 tons with cargo, and those in ballast, were British. Sailing vessels entered numbered 488, of 37,023 tons. Steam vessels cleared with cargo numbered 3,668, with an aggregate tonnage of 3,835,624 tons, and those in ballast 106, of 219,124 tons; of these 80 vessels of 146,225 tons, and those in ballast, were British.

30    **Communication.**—There is communication by rail with Athens and thence to Corinth, Patras, Nauplia, and Tripolitza on the west, to Lavrion on the east, and to Bralo, Larissa, Salonika, and so with the Continental system as well as Constantinople on the north.

The railway station is near the north-eastern corner of the inner port, whence frequent trains run to Athens and Phalerum.

There is telegraphic communication to all parts in connection with the Eastern Telegraph Company.

The telegraph office is open always.

Regular established lines of steamers run frequently to all parts of the Mediterranean and Black sea. See page 17.

**Consul.**—A British Consul and Vice-Consul reside at Piræus.

**Telegraph cables** are laid to the Isthmus of Corinth, Syra, and Ægina.

*General charts 894, 1513, 1657, 2836a, 1800.*

*Plan 1520, The Piræus and Phalerum bay. Var. 3° 30' W.*

**Repairs, &c.**—The workshops attached to the patent slip are fitted with the latest plant. There are seven engineering and repairing shops established, and of these three are of importance, and capable of carrying out almost any class of marine work. There are flour floating cranes, one at least capable of lifting 10 tons. Repairs to machinery and boilers of large ships can be effected by the Vulcan Engine Works (Messrs. McDowall and Barbour), or at the works of Mr. Const. G. Basiliades. The sheers at the Vulcan Engine Works are constructed to lift 30 tons.

**Supplies** (*Lat. 37° 56' N., Long. 23° 39' E.*).—No good water is obtainable, what there is supplied in tank-vessels. The town is well supplied with provisions.

**Coal.**—About 430,000 tons of coal are imported annually and about 35,000 tons of coal (principally Welsh) are kept in stock by the different firms; coaling is performed by lighters alongside; these lighters carry from 10 to 80 tons, and 800 to 1,000 tons can be loaded in 24 hours.

**Sailors' home.**—This excellent institution was established about twenty-five years ago, and it is so much appreciated that it has been visited by some 2,700 sailors, and others, in one year.

**Winds.**—The strongest winds during winter are from the northward, or between N.W. and N.E., frequently accompanied by heavy squalls, sleet, and snow. Should the wind be at S.W., and veer round to N.W. and North, with the barometer rising, a gale from the northward may be expected. In June and July, strong northerly winds occur in the Gulf of Athens every week or ten days, and last for two or three days; gales from the north-eastward usually last three days. During the summer months, the S.W. winds are most prevalent, when the sea breeze blows nearly all day, and in the afternoon directly into the harbour. December and January are usually attended with heavy rain.

**Meteorological table.**—For result of observations extending over a series of years at Athens, see Appendix III., page 501.

*Chart 1513, Athens to the Isthmus of Corinth.*

**SALAMIS or KOLURI.**—This singularly shaped island lies close to the westward of the Piræus peninsula, its most eastern point being  $2\frac{1}{2}$  miles west-north-westward from Cape Themistocles. It occupies an extent of  $8\frac{1}{2}$  miles east and west, and 8 miles north and south, with an irregular coast line forming numerous bays, inlets, and projecting points. Its eastern and north-western extremes are separated from the mainland by narrow winding channels, enclosing on the north the beautiful bay of Eleusis, the southern part of the eastern channel being known as Salamis strait. The island is hilly, and near

*General charts 894, 1513, 1657, 2836a, 1800.*

*Chart 1513, Athens to the Isthmus of Corinth. Var. 3° 30' W.*

the centre is Mavro Vuni, 1,270 feet high. Its surface is rocky, with a thin but not unproductive soil; the vine thrives and the other principal product is honey. The population of the island in 1896, was 5 6,633.

*Plan 89½, Salamis strait and Georgio channel.*

**LIPSO ISLAND** (ancient *Psyttalia*) (*Lat. 37° 56' N., Long. 23° 36' E.*), situated at the southern entrance to Salamis strait, is about 9 cables in length, 155 feet high, with the lighthouse, and 10 some white tombs resembling beacons on its north-eastern end. At 3½ cables westward of the south-west extremity of Lipso is Atalanta islet, and three-quarters of a mile beyond that islet, in the same direction, is Propetes rock, above water. Very shallow water surrounds both the islet and the rock to the distance of three-quarters of a cable, 15 in addition to which nearly the whole space between them is occupied by shoal ridges, with from 3½ to 4 fathoms water, passable only by small vessels. The passage between Lipso and Atalanta islet, and also between Propetes rock and Salamis, is clear and deep, and may be used with a fair steady breeze or under steam, if convenient.

20 **LIGHT.**—Near the north-eastern end of Lipso island is a circular grey stone tower, on a dwelling, 46 feet high, from which a light is shown at an elevation of 152 feet.

**Batteries.**—On Lipso island, batteries, protected by earthworks and mounting modern guns, 25 have been erected on the north-east and south-west ends, also two in the centre of the island on commanding heights about 500 yards apart; other forts have also been erected on all the commanding positions of Salamis strait and the 30 entrance to the Piræus.



Lipso island lighthouse.

**SALAMIS STRAIT**, between the eastern coast of Salamis island and the main, affords excellent anchorage for a large number of ships, over a space of about 1½ miles east and west, by three-quarters of a mile north and south, in depths from 12 to 18 fathoms, 35 sand and shells.

Salamis strait is protected on the south by a long tongue of land projecting eastward from Salamis island, and by Lipso island, and the islets, rocks, and reefs west of it, which add considerably to the 40 shelter.

A conspicuous building, painted white with a red roof, and surrounded by a wall, is situated on the summit of the north-western point of Karrachin bay.

**Shoals.**—In the western part of Salamis strait, and 3¾ cables eastward of the north point of Ambelaki bay, is the outer end of a shoal 45

*General charts 1513, 1657, 2836a, 1800.*

*Plan 1520, The Piræus and Phalerum bay. Var. 3° 30' W.*

with 3 fathoms water over it, which should be avoided by large vessels anchoring in this part of the strait.

In the entrance to Karrachin bay, and 4 cables to the south-eastward of the conspicuous white building referred to above, is a small islet surrounded by shallow water for a distance of about half a cable. 5

The depths on the northern shore shoal gradually, but the southern shore is steep excepting at Sedukia point (*Lat. 37° 57' N., Long. 23° 35' E.*), from which shoal water extends for about 60 yards, with sand and rocky bottom. 10

**Anchorage.**—Vessels may anchor where convenient, but if any stay is to be made, it will be necessary to moor, as during strong northerly or north-westerly winds in winter very heavy squalls blow from the high land, sweeping the surface of the water before them.

**Supplies.—Caution.**—No fresh water can be obtained from the adjacent shores at the anchorage in Salamis strait; all supplies must be obtained from the Piræus, and as strong southerly winds frequently cause a heavy sea between the two places, a good berth should be given by boats to the rocky points on the northern side of entrance to the Piræus. Water will, however, be sent from Piræus in tanks. 15 20

**Georgio channel.**—The passage into Eleusis bay on the eastern side of Salamis island is called Georgio channel, which, eastward of Georgio nisi, is only  $1\frac{1}{2}$  cables wide between the 3-fathoms lines on either side, and carries  $3\frac{1}{4}$  to 4 fathoms water. 25

**Buoys.**—The Georgio channel is marked by three conical buoys on each side.

**Beacon.**—A tower is built on a small rock near the north end of a one-fathom bank on the eastern side of the channel.

**Shoal.**—A 3-fathoms patch lies 2 cables north-north-eastward from the north point of Georgio nisi, its northern side being marked by a buoy. 30

**Dockyard.**—A government dockyard of considerable importance is situated on the eastern side of Salamis island, a quarter of a mile to the southward of Arabi point, which is about  $1\frac{1}{4}$  miles northward of Georgio nisi. There is a basin for loading and unloading barges and lighters, entered from the south-west corner. A pontoon with large sheers can be moved as required. From under the Director's house a stone pier extends about 350 feet southward, alongside which a vessel of moderate draught can lie. Immediately south and detached is a smaller yard containing a torpedo school, and launching slips for a flotilla of torpedo boats of various sizes. A stone pier extends about 400 feet eastward from the point near the torpedo school. 35 40

**Lights.**—A light is shown from an iron column, 10 feet high, on the pierhead under the Director's house, and another near the outer end of slipway. 45

*General charts 1513, 1657, 2836a, 1800.*

*Plan 894, Salamis strait and Georgio channel. Var. 3° 30' W.*

**Floating dock.**—See Appendix I., page 498.

**Quarantine.**—This establishment is situated on Georgio nisi, which is connected by submarine cable with Salamis island.

- 5 **Mooring buoys** have been laid out for adjustment of compasses in the bay between Arpedoni and Karathes islands.

**Ferry.**—A sailing ferry-boat crosses from Salamis, close south of the southern dockyard, to the mainland.

*Chart 1513, Athens to the Isthmus of Corinth.*

- 10 **ELEUSIS BAY** (Lat.  $38^{\circ} 01' N.$ , Long.  $23^{\circ} 32' E.$ ).—This splendid bay, which appears almost like a lake, is about  $8\frac{1}{2}$  miles in length east and west, with an average breadth of 2 miles, and derives its name from the ancient town on its northern shore. The depths throughout are from 7 to 18 fathoms, and the bottom is remarkably  
15 level. The shore is bordered generally by a narrow bank, and a quarter of a mile off the northern extreme of Salamis island is a shoal with  $1\frac{1}{2}$  to 3 fathoms water on it. There is no fresh water to be obtained, the springs which supply the mills at Rheiti on the east shore being strongly impregnated with nitre. The eastern approach to Eleusis bay  
20 is through Salamis strait and Georgio channel, with 4 fathoms of water. The western approach to the bay, at the north-western end of Salamis, is fronted by islets, which with a long tongue of land from the main overlapping the projecting north-western extreme of Salamis, forms a narrow tortuous channel into the bay, through shallow water, the  
25 greatest depth over the mud being about  $2\frac{1}{4}$  fathoms. This passage was blocked by Xerxes, the night before the battle of Salamis, with two hundred Persian ships, at the suggestion of Themistocles.

**Telegraph.**—The town of Eleusis, with a population of 7,500 in 1914, is a telegraph station, and is connected by railway with Athens.

- 30 **CAPE KONKHI**, the south point of Salamis island, lies  $9\frac{1}{4}$  miles south-westward of Cape Themistocles and 16 miles north-westward of Phleva island.

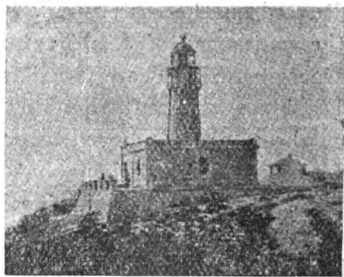
- LIGHT.**—A light is shown at an elevation of 111 feet from a  
35 cylindrical masonry tower, 39 feet high, on Cape Konkhi, the south point of Salamis island.

- Eleúsa isles** lie at a distance of  $3\frac{1}{4}$  miles southward of Cape  
40 Konkhi. See page 123.

- Koluri bay**, on the western side of Salamis island, is  $1\frac{3}{4}$  miles wide at the entrance between Cape Petrite, about 4 miles north-north-

- 45 westward of Cape Konkhi, on the south, and Rhevituza islet on the

*General charts 1513, 1657, 2836a, 1800.*



Cape Konkhi lighthouse.

*Chart 1513, Athens to the Isthmus of Corinth. Var. 3° 40' W.*

north, running in 5 miles to its head, where the anchorage space is much contracted by shallow water. The village of Koluri is on the north side, and near the head of the bay. A vessel may anchor southward of a little chapel, situated about three-quarters of a mile westward from the village, in about 8 fathoms water, or farther out as convenient. See view below. 5

**Mastiff bank** (*Lat. 37° 56' N., Long. 23° 24' E.*).—This bank, nearly in the middle of the entrance to Koluri bay, is about 6½ cables in length north-west and south-east, and the general depths over it vary from 11 to 19 fathoms, but on its north-western part is a rocky patch with 4 fathoms only situated a mile 1° true from Cape Petrite. The mill or the chapel at the head of Koluri bay, kept well open of the north shore, leads south of the 4-fathoms patch. 10

**A patch** of 5 fathoms lies nearly 4 cables from the east shore of the bay, bearing about 6° true, distant one mile from the little village of Mulké. 15



View of Koluri bay from the Mastiff rock.

**Supplies, water.**—No supplies or water can be obtained in Koluri bay.

**Megara bay.**—Theodoro point, on the mainland, lies nearly 13 miles westward of the western point of Salamis island, and between these points the coast falls back to the northward, forming an indentation which takes the name of Megara bay from the town of this name situated on a hill 1¼ miles from the shore, and 3½ miles from the north-western extreme of Salamis island. This town in 1914 had a population of 9,000, and is connected by railway with Athens and Corinth. In the bay there are no outlying dangers, and the water is everywhere deep, but precaution is necessary when under sail, to guard against the heavy squalls during strong northerly winds. At about half a mile north-eastward of Theodoro point is the small church of Agios Theodoro. 20 25 30

**Telegraph.**—The town of Megara is a telegraph station.

**Paki island** lies about 4 cables from the mainland, a little to the eastward of Megara and southward of Agios Georgio hill, on which is a conspicuous red and white hut. Between Paki island and the shore is the islet of Pakiaki, which is joined to the mainland by a causeway, alongside which steamers lie. 35

**Anchorage** may be obtained north-eastward of Paki island, but the water is deep.

*General charts 1657, 2836a, 1800.*

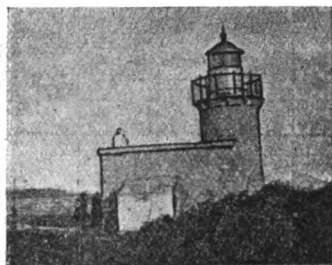


*Chart 1513, Athens to the Isthmus of Corinth. Var. 3° 40' W.*

Susaki point is 4 miles westward of Theodoro point, and the coast between these points and on to Kalamaki village,  $1\frac{3}{4}$  miles to the westward, is bold, being the base of Mount Geraneia, which at  $4\frac{1}{2}$  miles inland rises to 4,494 feet.

**LIGHT** (Lat.  $37^{\circ} 55'$  N., Long.  $23^{\circ} 03'$  E.).—A light is shown, at an elevation of 30 feet, from a cylindrical masonry tower 25 feet high, with a dwelling attached, erected on Susaki point.

*Plan of Kalamaki bay on chart 1600.*



Susaki point lighthouse.

**KALAMAKI BAY** (ancient *P. Schænus*) in the north-west corner of the Gulf of Athens, and on the eastern side of the Isthmus of Corinth, may be said to be contained between Susaki point on the east and Cape Sophia on the west, these points being two miles apart. The bay affords accommodation for vessels of all sizes, in from about 6 to 19 fathoms, sand or mud bottom. It is open to the south-eastward, but not exposed to much sea, though subject to very heavy squalls from the high land around it, especially from the northward, and at times these blow so furiously as to part a vessel's chain. In approaching the bay, the Acro-Corinthus, a bold magnificent object, will be seen to the westward, rising 1,941 feet above the sea, on the south side of the low land that separates the Gulf of Athens from that of Corinth. Kalamaki village, with only 225 inhabitants in 1896, is on the north side of the bay.

Kalamaki bay is of especial importance owing to its connection with the Gulf of Corinth by the canal of this name.

**Anchorage.**—The usual anchorage is in 16 or 17 fathoms water, sandy bottom, with the village of Kalamaki bearing about  $6^{\circ}$  true, distant half a mile; Susaki point lighthouse,  $92^{\circ}$  true; peak of Ægina just open north of Hevræo islet  $119^{\circ}$  true; and the northern extreme of Acro-Corinthus  $261^{\circ}$  true. Vessels may also anchor in 10 to 12 fathoms, a quarter of a mile north-north-westward of this, and small vessels may anchor in 6 fathoms, mud bottom, off the pier of the village of Kalamaki.

**Communication.**—Kalamaki village is connected with the railway and telegraph system of Greece.

**Telegraph cables.**—A telegraph cable from the Piræus is landed near the village of Kalamaki, and another cable proceeds from the other side of the isthmus to Patras.

*General charts 1513, 1600, 2836a, 1800.*

*Plan of Kalamaki bay on chart 1600. Var.  $4^{\circ}$  W.*

**Isthmia** (Lat.  $37^{\circ} 55' N.$ , Long.  $23^{\circ} 01' E.$ ), a small but important town, stands on the north-east side of the entrance to the canal from Kalamaki bay, and a ferry connects it with the opposite bank of the canal; it is the principal station of the canal, and here are situated the Health office, Custom-house, Post office, and Telegraph office. 5

*Plans of Kalamaki bay and Corinth roads on chart 1600.*

**CORINTH CANAL.**—This great engineering work follows almost exactly the line of the canal commenced, but never completed, by the emperor Nero 1,800 years ago. The present canal was commenced in 1882, and opened by the King of Greece on the 6th August, 1893. 10

The Corinth canal is the shortest way for vessels sailing from the Adriatic sea and the ports of France and Italy to the Ægean sea, and ports in Turkey, Bulgaria, Roumania, Russia, and Asia Minor.

**Dimensions.—Depths.**—The canal is straight in a north-west and south-east direction, and is 3 statute miles 1,610 yards in length. The north-western portion of the canal for a distance of 1,280 yards, and the south-eastern part for a distance of 933 yards, were dredged and are 98 feet wide at the water line, 72 feet at the bottom, with a depth of  $25\frac{1}{2}$  feet. The remainder is a cutting through the land (the summit of which was 250 feet above the level of the sea) and is faced with masonry; it is nearly 81 feet wide at the water line, 69 feet at the bottom, and has a depth of about 26 feet 3 inches. The railway from Athens to Corinth and Patras crosses the canal by a bridge, the height of which from the water to the lower surface of the principal beams is 144 feet. 15 20 25

The canal is available for vessels whose draught does not exceed  $23\frac{1}{2}$  feet, regulated by their beam; see Provisional regulations, page 141.

Large vessels are recommended to take two tugs, and not to enter the canal from the westward during squalls, which are frequently very heavy and the west entrance is very narrow. 30

H.M.S. *Tyne*, 3,560 tons, passed through the canal in 1905 with one tug and no pilot.

The Orient s.s. *Lusitania*, length 380 feet, breadth 41 feet, and a tonnage of 3,877 tons, has passed through the canal. 35

Her Majesty's yacht *Osborne*, with an extreme beam of 64 feet 2 inches, passed through on the night of 2nd May, 1899, under her own steam, a tug also towing ahead.

None of the foreign steamship companies navigating the Mediterranean now use the canal; it is mostly used by small Greek passenger steamers. 40

**Moles.**—The entrance to the canal on the Corinth side is protected by two moles, forming the port of Poseidonia, the heads approaching

*General charts 1513, 1600, 2835a, 1800.*

*Plans of Kalamaki bay and Corinth roads on chart 1600. Var.  $3^{\circ}40'W$ . one another, and leaving a passage 80 yards wide (see Mediterranean Pilot, Vol. III.).*

The south-eastern entrance in Kalamaki bay, is protected by a single  
5 breakwater curving from the shore north-east of it.

**Lights** (Lat.  $37^{\circ} 55' N.$ ,  
Long.  $23^{\circ} 01' E.$ ).—A light is  
shown on the extremity of  
the breakwater in Kalamaki  
10 bay and also on the west side  
of the eastern entrance to  
the canal. The head of each  
mole at Poseidonia is marked  
by a light, and, in addition  
15 to these, there are small elec-  
tric lights arranged in pairs  
on either side of the canal; the pairs are placed about 218 yards apart.



Eastern entrance to Corinth canal.

**Bollards** are placed along the sides of the canal about 110 yards  
apart to assist vessels keeping in the middle of the canal.

20 **Winds**.—The prevailing winds in the canal are north-west (or in  
the direction of the canal), next follows an east wind, and, lastly,  
north. These winds require much attention when entering from the  
Poseidonia side.

**Tides**.—It is high water, full and change, approximately at Vh.;  
25 springs rise 10 inches, neaps are irregular.

In the canal, at full and change, the stream commences to run to  
the northward at 9 a.m. and to the southward at 3 p.m.; the stream  
sets about 6 hours each way at springs, attaining a velocity of 2 knots,  
which gradually decreases to neaps. Four days before springs the  
30 current runs to the northward for eight hours and to the southward  
for four. The movement of the tidal streams in the canal, just  
described, is liable to interruption from the effect of the wind in hold-  
ing up the water either in Corinth or Kalamaki bay. The general rate  
of the stream is  $1\frac{1}{2}$  knots, and seldom exceeds 2 knots. There is a  
35 range of 5 feet in the level of the sea at Poseidonia, and 3 feet at  
Isthmia. Sometimes a set across the entrance at Poseidonia is expe-  
rienced. See Current signals below.

**Current signals**.—The following signals are shown from the  
flagstaff at each end of the canal.

40 In the daytime two triangular white flags, or at night a red light  
over a white light, signify that the current follows the same direction  
as the entering ship.

In the daytime a triangular white flag, or at night two vertical red

*General charts 1513, 1600, 2836a, 1800.*

*Plans of Kalamaki bay and Corinth roads on chart 1600. Var. 3° 40' W.* lights, signify that the current is opposite to the direction of the entering ship.

No current signal at all at the flagstaff signifies that there is no current.

**Directions.**—As may be gathered from the foregoing remarks, the best time to navigate the canal, especially with large vessels, is when the stream is adverse, as they will be more under command, but the authorities do not consider there is any necessity to wait, though they recommend large vessels in any case to employ tugs. Vessels cannot pass one another in the canal, as there are no sidings.

**Passage restricted.**—Vessels are prohibited from passing through the canal between 6h. p.m. and 6h. a.m. until further notice, in consequence of a landslip; passage at other times is permitted as usual.

**Traffic.**—In 1914, the total number of steamers passing through the Corinth canal was 2,446, of 939,082 tons aggregate, 43, of 46,474 tons, being British; 1,423 sailing vessels, of 46,474 tons, also made use of the canal.

**Provisional Regulations for navigating the canal** (*Lat. 37° 56' N., Long. 22° 59' E.*).—Masters of vessels shall conform to the regulations, obey all signals mentioned therein, and comply with any requisitions made to them to execute the regulations. A copy of the regulations will be supplied to them on demand, and should always be obtained as these regulations are liable to alteration.

The transit through the Corinth canal is open to vessels of all nationalities.

The maximum draught for vessels using the canal is 23½ feet, and is regulated by their beam, as follows:—

Beam.	Maximum draught.
46 feet and under	23 feet 6 inches.
Up to 47 " 6 inches	23 " 0 "
" 49 " 0 "	22 " 3 "
" 50 " 9 "	21 " 6 "
" 52 " 6 "	21 " 0 "
" 54 " 0 "	20 " 3 "

Sailing vessels of 4 tons, or more, must be towed through. Steam vessels may pass through the canal under their own steam, or be towed.

The canal authorities are not compelled to tow steam vessels, but if there are tugs unengaged, it will be done.

The speed of vessels must not exceed 6 miles an hour.

Masters of vessels passing through the canal must pay all dues for passage at the entrance, and when necessary, those for towage and pilotage. Payment is made on the net register tonnage (Suez canal

*General charts 1513, 1600, 2836a, 1800.*

*Plans of Kalamaki bay and Corinth roads on chart 1600. Var. 3°40' W. certificate), and is collected at either end. They must also give the following information in writing:—*

- Description of the vessel. Name and nationality of the vessel.
- 5 Name of the master. Name and address of the owners.
- Port of sailing. Port of destination. Draught of water.
- Number of passengers, to be ascertained from the passage list.
- Number of the crew. Tonnage and nature of the cargo.
- Net tonnage to be ascertained by the vessel's official papers, and the
- 10 rules of the International Tonnage Commission assembled at Constantinople in 1873.

The canal authorities determine the time of departure and the stoppages of each vessel. No vessel can enter the canal until the permission of the Captain of the Port has been received.

- 15 By day, a blue flag, and by night, a *white* light signify that the passage is clear. A red flag, or two *white* lights, that the passage is not clear.

- All vessels preparatory to entering the canal, must have their yards braced up and boats swung inboard. In addition to two bow anchors,
- 20 a kedge with a hawser bent to it, strong enough to hold the vessel, must be carried at the stern ready for letting go.

- Vessels navigating the canal by night must carry besides the regular lights, a *white* stern light. When towed, only the vessel being towed carries the light, and if more than one vessel is towed, only the last
- 25 vessel carries the stern light. In the event of grounding, the canal authorities shall have the right to direct all operations for floating the vessel, and if necessary, to unload and tow her at the expense of the vessel. The cost of floating, towing, discharging, and re-loading must be paid before the departure of the ship.

- 30 The following acts are prohibited in the canal:—

- Anchoring a vessel except under unavoidable circumstances.
- Throwing overboard cinders, ashes, or material of any kind.
- Firing guns on board vessels.

- All vessels must furnish their own warps and vessels being towed
- 35 must use their own propelling power, or have it in readiness to assist the tug, and furnish their own hawsers. Vessels can be towed by tugs not belonging to the Canal Society, but such tugs must pay the dues to which ordinary vessels passing through the canal are subject, except when going through the canal to meet vessels of their owner which they
- 40 intend towing, or when returning to their usual berths after having towed a vessel through.

*General charts 1513, 1600, 2836a, 1800.*

*Plans of Kalamaki bay and Corinth roads on chart 1600. Var. 3°40' W.*

**Tariff.**—The following are the rates for passage through the Corinth canal (*Lat. 37° 56' N., Long. 22° 59' E.*):—

	For coasting and vessels assimilated.	For vessels proceeding into the Adriatic.	For vessels proceeding into the Mediterranean.
<i>Mail steamers, ships of war, and pleasure vessels.</i>	Francs, gold	Francs, gold	Francs, gold
From one to 200 tons, for every ton -	1.35	1.35	0.80
„ 201 to 500 tons, for every ton above 200 - - - -	0.95	0.55	0.40
„ 501 tons upwards, for every ton above 500 - - - -	0.15	0.15	0.15
<i>Merchant steamers.</i>			
From one to 200 tons, for every ton -	1.35	1.35	0.80
„ 201 to 500 tons, for every ton above 200 - - - -	0.95	0.40	0.30
„ 501 tons upwards, for every ton above 500 - - - -	0.15	0.15	0.15
<i>Sailing vessels.</i>			
From one to 50 tons, for every ton -	0.95	0.95	0.95
„ 51 to 100 tons, for every ton above 50 - - - -	0.55	0.55	0.55
„ 101 tons upwards, for every ton above 100 - - - -	0.30	0.30	0.30

Minimum charge for passage of a steamer, 30 francs, gold.

„ „ „ „ sailing vessel, 10 francs, gold.

#### TOWAGE RATES.

Nett tonnage, from one to 10 tons - - -	Francs, gold	18.50 per vessel.
„ „ „ 11 to 20 tons - - -	„	37 „
„ „ „ 21 to 50 tons - - -	„	55 „
„ „ „ 51 to 150 tons - - -	„	90 „
„ „ „ 151 to 500 tons - - -	„	132 „
„ „ above 500; for the first 500 tons, 132 francs, and for every ton above 500, 0.15 francs per ton.		

#### PILOTAGE RATES.

For every ton - - - - -	Francs, gold	0.02
Minimum pilotage charge for all vessels - - -	„	15.00

For the south side of the Gulf of Athens *see* pages 113 to 120.

*Plan of Mandri channel on 1526.*

5

**CAPE SUNION** or **COLONNA** is the eastern point of entrance to the Gulf of Athens (*see* page 124) and the western point of entrance to the Mandri channel.

**MANDRI CHANNEL.**—Helene island forms, with the rugged and irregular coast which it fronts, Mandri channel, the narrowest part of which at Cave point, 3 miles from Cape Sunion, is about 10

*General charts 1513, 1657, 1600, 2836a, 1800.*

*Plan of Mandri channel on 1526. Var.  $3^{\circ} 20'$  W.*

- 1½ miles wide. The dangers to be avoided are Pasha rock, Makri reef, Tripiti rock and the shoal off the northern extreme of Helene island, and shoals off Ergasteria and Angarlestro points; with these excep-  
 5 tions the shore may be approached on either side within half a mile.

**Pegathi point** (*Lat.  $37^{\circ} 40'$  N., Long.  $24^{\circ} 05'$  E.*) bears  $48^{\circ}$  true, and is distant  $2\frac{1}{2}$  miles from Cape Sunion, the coast between forming Panorimo and Pasha bays.

- Pasha rock.**—This danger, with less than 6 feet water on it, is  
 10 the outer of the rocks skirting the irregular coast north-east of Cape Sunion. It lies  $1\frac{1}{2}$  miles from the cape, a little outside the line joining it and Pegathi point, and about 2 cables from the rocks above water on the southern side of Pasha bay. After rounding Cape Sunion, the coast should not be hugged too closely; Pegathi point bearing north-  
 15 ward of  $29^{\circ}$  true will lead outside Pasha rock.

**Cave point** is about half a mile north-eastward of Pegathi point, and, as before stated, is the nearest part of the mainland to Helene island.

- LIGHT.**—A light, elevated  
 20 39 feet above the sea, is exhibited from a circular iron tower, with dwelling near it, situated on Cave point.

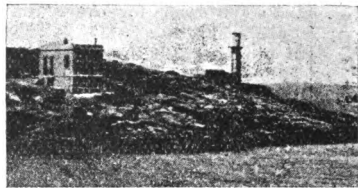
- Plan of Port Mandri and*  
 25 *Ergasteria bay on 1526.*

**ERGASTERIA (LAV-  
 RION) BAY** (*Lat.  $37^{\circ} 42'$  N.,*

- Long.  $24^{\circ} 04'$  E.*) is situated  $1\frac{1}{2}$  miles northward of Cave point. The town, which had in 1907 a population of 10,007, owes its prosperity  
 30 to its being the principal port of shipment of ores brought down from the valuable silver, zinc, lead, galena, and iron mines in the Sunion district, and to facilitate which a railway is carried as far as Kamaresa, with branch lines to various points.

- Ergasteria bay is about 4 cables wide and long, open to the eastward,  
 35 and has a depth of 8 to 3 fathoms water over muddy but indifferent holding ground. Vessels are recommended to keep  $1\frac{1}{2}$  to 2 cables from the south shore, from which shoal water is said to extend fully one cable.

- On a hill at the south side of the bay is a large conspicuous factory  
 40 chimney, an excellent mark in approaching the port either from the northward or southward. On opening the bay, the town with large storehouses will be seen, and on a hill above it, a small Greek church.



Cave point lighthouse.

*General charts 1657, 2836a.*

*Plan of Port Mandri and Ergasteria bay on 1526. Var. 3° 20' W.*

The winds from the northward at times blow with great violence, and at all times of the year.

Furnaces and smelting houses are situated at the head of the bay, where two small wharves and a quay have been constructed, from which steam vessels ship the ores; the depth alongside the quay being from 15 to 20 feet (*Lat. 37° 42' N., Long. 24° 04' E.*). 5

**Wreck.**—The remains of a wreck, with  $4\frac{1}{2}$  fathoms of water over them, lie in the entrance to the bay  $96^\circ$  true  $4\frac{4}{10}$  cables from the eastern extreme of the quay. 10

**Rock.**—The Robert Irvine rock, with a depth of  $3\frac{3}{4}$  fathoms over it, is situated a quarter of a mile  $135^\circ$  true from Ergasteria point.

**Pilots.**—Pilotage is not compulsory, but there are a few authorized pilots who are very useful in taking vessels alongside the piers. The charges, which are not regularly fixed, vary from 75 to 125 drachmæ. 15

**Pratique.**—Any vessel coming from a contaminated port is sent to a quarantine station for 5 to 11 days; if from a non-contaminated port she is subjected to a medical inspection, summary or minute, according to circumstances, after which pratique is given.

**Repairs.**—There are two companies who can execute small repairs to machinery, and works capable of undertaking repairs to ships. 20

**Trade.**—The exports (minerals only) for the year 1906 amounted to £592,427, and the imports to £73,268.

**Shipping.**—About 200 vessels enter the port annually to load.

**Coal and Supplies.**—The former can be supplied and loaded at the rate of 100 tons an hour. Fresh provisions in limited quantities are obtainable at any time, but nearly all supplies come from the Piræus; for bread in large quantities 12 hours' notice is necessary. Meat is of mediocre quality and fish is sometimes scarce. 25

**Water.**—A tank carrying from 15 to 20 tons of water supplies shipping, but it is reported to be rather brackish. 30

**Communication.**—Ergasteria or Lavrion is a telegraph station. Railway trains run twice daily to Athens. Steamers from Piræus to Volo call daily. A telegraph cable is landed here from Zea island. 35

**Consul.**—A British Vice-Consul resides at Lavrion.

**PORT MANDRI**, immediately north of Ergasteria bay, is separated from it by a small hilly peninsula. The so-called port is a bay about three-quarters of a mile wide between the entrance points, and more than half a mile deep, but a bank with less than 3 fathoms on it extends 2 cables from the western shore. The anchorage is in the central part, in about 10 fathoms, mud and weed, good holding ground. 40

*General charts 1657, 2836a.*



*Plan of Port Mandri and Ergasteria bay on 1526. Var. 3° 20' W.*

Both Mandri and Ergasteria bays are protected from the eastward by Helene island. There are several factories on the shore of the bay, and a small village half a mile from the head of the port, called  
5 Thoricus, a station on the railway from Lavrion to Athens.

*Plan of Mandri channel on 1526.*

**Vrisaki point** bears 6° true from Cave point, distant 3½ miles, and forms the north side of Vrisaki bay, where vessels occasionally anchor.

10 **LIGHT** (Lat. 37° 44' N., Long. 24° 05' E.).—A light is exhibited at an elevation of 72 feet from a square masonry tower on a dwelling-house, 24 feet high, situated on Vrisaki point.

*Chart 1657, Gulf of Athens.*

15 **Cape Mavrovuni** is 3¼ miles northward from Vrisaki point, and may be said to be the west entrance point of Mandri channel from the northward.

**Jetty.**—Between Vrisaki point and Cape Mavrovuni, on the west side of Aulaki bay, at the foot of the mount of that name, is erected an iron jetty belonging to the Sunium mines, French company, for the  
20 shipment of manganese ore from their mines at Kamaresa. The height of jetty is 30 feet, length about 90 feet, and depth of water 25 feet, and off it there is good sandy bottom for anchoring.

Mooring appliances have been provided, but steamers loading there should be plentifully supplied with stout wire hawsers. The place is  
25 reported to be safe in good weather, but steam should be kept ready in the event of strong winds from E.N.E. to S.E., to run to Port Agios Nikolaos in Zea, or to Port Mandri to the southward.

*Plan of Mandri channel on 1526.*

30 **HELENE ISLAND** or **MAKRONISI** is a long narrow island 7 miles in length in a north-north-east and south-south-west direction, and from 1¼ miles to three-quarters of a mile in breadth, hilly and rugged throughout. Its coast line is irregular and cliffy, and its most elevated parts, which are at its northern end, and about one-third from its southern end, are 918 feet and 578 feet high  
35 respectively.

**LIGHT.**—A light is shown at an elevation of 115 feet, from a white cylindrical tower on square stone base, on Point Angaralestro, the south extreme of Helene island.

40 **Shoal.**—On the western side of Point Angaralestro, the bluff south point of the island, lying parallel with and 1½ cables from the shore, is a rocky shoal about 2 cables in length, with 6 feet water on it.

*General charts 1657, 2836a.*

*Plan of Mandri channel on 1526. Var.  $3^{\circ} 20'$  W.*

**Makri reef** (Lat.  $37^{\circ} 41'$  N., Long.  $24^{\circ} 06'$  E.),  $2\frac{1}{10}$  miles northward of Point Angarlestro and half a mile from the western coast of the island, is nearly 2 cables in length north and south, with only  $1\frac{1}{2}$  fathoms water on its southern and shoalest part. The whole of Megalo island open west of Helene island bearing  $27^{\circ}$  true (*see sketches on plan and below*), or at night the *white* sector of Vrisaki point light, leads westward of the reef. 5



*Megalo island. Helene island.*  
View northward from Makri reef.

A large rock close to the western coast, with sunken rocks about a cable outside it, lies nearly a mile south-westward from Cape Tripiti, the northern end of Helene island. 10

**Tripiti rock**, awash, and on which, except in calm weather, the sea generally breaks, lies  $302^{\circ}$  true, distant half a mile from Cape Tripiti, the north extreme of Helene island. The town of Zea, open northward of Cape Tripiti, leads northward of the rock; and the summit of Agios Georgio island, in line with Pegathi point, bearing  $208^{\circ}$  true, leads westward of it. At nearly 2 cables southward of Tripiti rock is a shoal with 4 fathoms on it. *See view on plan and below.* 15

**At night**, keeping in the *white* sector of Vrisaki point light leads north-west of Tripiti rock. 20



*Cape Tripiti. Helene island. Pegathi point.*  
View southward from Tripiti rock.

**Cape Tripiti** is shoal a cable off, and a large rock above water with sunken rocks outside it lies in the small bight on the eastern side, about one-third of a mile from the cape. With the foregoing exceptions there are no dangers about Helene island, and the water is deep at the distance of a quarter of a mile. 25

*Chart 1657, Gulf of Athens.*

**Zea channel**.—The passage between Zea and Helene island is nearly 8 miles wide, clear of danger, and deep.

**ZEA or KEOS ISLAND** is  $10\frac{1}{2}$  miles in length in a north-east and south-westerly direction, and its greatest breadth, nearer the 30

*General charts 1657, 2836a.*

*Chart 1657, Gulf of Athens. Var. 3° 20' W.*

north end, is  $5\frac{3}{4}$  miles. The island is steep to all round, no dangers existing more than a quarter of a mile off shore. The town of Zea (ancient *Iulis*) stands on a small conical hill on a spur of Mount Agi' Anna (see sketch on chart 1657), and is approached from Port Agios Nikolaos by a steep but excellent road winding along the sides of the hills. The population of the island in 1907 amounted to 3,817.

Amongst the few antiquities remaining in the island is a rudely executed colossal lion in bas-relief 20 feet in length, cut on the face of a kind of slaty rock in a valley between the town of Zea and Mount Agi' Anna.

**Productions.**—The island produces cotton, silk, wine, and a considerable quantity of valonia; oaks crown the highest ridge and extend some distance down the valleys on the south. There are also some mines, but they are not at present being worked.

**CAPE TAMELOS.—LIGHT** (*Lat. 37° 31' N., Long. 24° 17' E.*).

A light is shown at an elevation of 200 feet from a cylindrical tower with dwelling attached, 25 feet high, situated on Cape Tamelos, the south-west extreme of Zea island.

**Port Kavyas** is a little bay on the west side of the island, about 3 miles northward of Cape Tamelos, off which vessels may anchor, but in rather deep water, during north-easterly winds. Ekkliino point, northward of the port, should be given a berth of half a mile, as an isolated flat rock with 3 feet water on its western part, and on which the sea breaks, lies a quarter of a mile south-west of its southern projection.

A small inlet about a mile northward of Ekkliino point, named Port Pisa, affords shelter for small coasters with off-shore winds. On the hills over the southern side of the inlet are some traces of ancient remains.

*Plan of Port St. Nikolo on 1526.*

**Port Agios Nikolaos** (St. Nikolo).—The only well-sheltered port in Zea island is that of Agios Nikolaos on the north-western side of the island, about  $6\frac{1}{2}$  cables in length, and  $2\frac{1}{2}$  cables in breadth in the outer part, with from 12 to 19 fathoms water. The entrance is between bold headlands on either side, but that on the north, named Point Agios Nikolaos, is bordered by a shallow bank which extends off about 40 yards. The best anchorage is in the northern part, in 14 or 15 fathoms, mud, taking care to avoid the telegraph cable from Lavrion, which is landed at the cable-house on the north shore. With fresh north-westerly winds, a heavy swell sets into the southern part of the port, and therefore sailing vessels on the north side can

*General charts 1657, 2836a.*

*Plan of Port St. Nikolo on 1526. Var. 3° 20' W.*

more readily put to sea when the wind moderates, and it never shifts suddenly from north to south.

The Custom house is on the western side of the bay in the southern part of the port, where there is a sandy shore; the head of Port Agios Nikolaos is also composed of a sandy beach, off which a shallow bank extends three-quarters of a cable. The port will be known from seaward by Mount Agios Savvas (Savos), a rather elevated hill, on the south side of entrance and above the Custom house just mentioned; the tongue of land forming Point Agios Nikolaos being rather level, and lower, with the lighthouse near its extremity. *See views on plan and below.*

Port Agios Nikolaos is convenient for vessels bound through the Doro channel, when unable to make headway against strong north or north-easterly winds.

**LIGHTS** (*Lat. 37° 40' N., Long. 24° 19' E.*).—A light is shown, at an elevation of 118 feet, from a quadrangular tower on octagonal base, 26 feet high, on Point Agios Nikolaos, the north point of entrance.



Point Agios Nikolaos lighthouse.

A light, known as Agios Savvas light, is shown from an iron column with hut, 20 feet high, situated on the south side of the entrance to Port Agios Nikolaos.

**Signal station.**—A white signal station is situated on the heights about  $1\frac{1}{2}$  cables to the north-eastward of Point Agios Nikolaos lighthouse.

**Communication.**—Agios Nikolaos is connected by telegraph cable with Ergasteria (Lavrion) bay, and two steamers call weekly, connecting with Syra and Piræus. The telegraph office is at the town of Zea, some two hours' journey from the port.



Point Agios Nikolaos.

Zea town.

Entrance to Port Agios Nikolaos, bearing 86° true;  $2\frac{1}{2}$  miles.

**Shipping.**—In 1907, 156 steamers entered the port, in addition to the weekly mail steamers, of which 66 were British.

**Trade.**—The exports consist of valonia, barley, cattle, wine, vegetables, honey, wax, hides, and almonds; the imports are coffee, cotton

*General charts 1667, 2836a,*

*Plan of Port St. Nikolo on 1526. Var. 3° 20' W.*

and woollen goods, flour, oil, sugar, &c. In 1907 the former were valued at £10,170, and the latter at £14,300.

**Water and provisions** can be obtained.

5 **Port Oryas**, at the northern end of the island, is a narrow inlet about half a mile deep with a beach at its head, but exposed to north-easterly winds, and is therefore not used except in cases of necessity. At about three-quarters of a mile eastward of the entrance is the little islet of Spano,  $1\frac{3}{4}$  cables from the shore, with which it is connected by a rocky bank.

10 *Charts 1820, 1657.*

**East coast of Zea.**—The east coast of the island from Cape Tamelos to Cape Spathi and Spano islet appears to be clear of danger everywhere, a depth of 30 fathoms being nowhere more than 3 cables from the shore.

*Chart 1657, Gulf of Athens.*

**Port Polais.**—On the south-east coast of Zea, 3 miles from Cape Tamelos, is Port Polais, a small exposed bay, with the swell always setting in on the beach. Here are the remains of an ancient and strongly built town; some inscriptions are still extant, and the impression of two colossal feet, cut in a large block of marble. It is supposed to be the ancient *Karthea*.

**Current.**—There are no off-lying dangers round the whole coast of Zea, but in light northerly winds vessels should not approach its northern end too closely, as the current sets strongly towards it.

*Plan of Port Raphtis on 1526.*

**PORT RAPHTIS** (*Lat. 37° 53' N., Long. 24° 03' E.*).—At  $5\frac{1}{2}$  miles north-north-westward of Cape Mavrovuni (page 146), on the mainland, is Raphtis or Statue islet, less than 2 cables in diameter, and 298 feet high. On this islet, which lies in the entrance to Port Raphtis, are the remains of a colossal statue of white marble in a sitting posture, which, being much mutilated and disfigured, has been at a distance likened to a tailor sitting cross-legged, and hence the name of both islet and port.

35 **Port Raphtis** (ancient *Prasie*) is rather over a mile wide at the entrance, and about  $1\frac{1}{2}$  miles deep; north-westward, 3 cables from Raphtis islet is a smaller one called Raphtis Pulo, and westward 8 cables from the former is another islet called Praso. These islets, together with a projecting point at the head of the port, and shallow water around its irregular shore, considerably contract its area. There is, however, a large available space for anchoring, though exposed from the eastward; the water in places is rather deep, and the holding ground is not so good as at Port Mandri. The best anchorage is on

*General charts. 1657, 2836a.*

*Plan of Raphthis on 1526. Var. 3° 20' W.*

either the northern or southern side of the port. The port is easily known by a remarkable bluff on the southern side of entrance, the bold land of Mount Perati, 1,030 feet high on the northern side, and by Raphthis islet, which may be passed on either side.

See view on plan 1526.

**Water** may be obtained here, cattle easily procured, and firewood may be had in abundance.

**Communication.**—The nearest railway station on the line from Lavrion to Athens is Markopoli, distant about 4 miles.

*Chart 1597, Petali gulf and Euripo channel.*

**Marathon bay.**—At about 6 miles northward of Port Raphthis, is the low projecting point of Velani, surrounded by a shoal extending off half a mile, with two little islets on it; on the southern side of the point the shore is low and sandy. At  $7\frac{1}{2}$  miles 9° true from Velani point is Cape Marathon, the termination of a narrow rocky tongue of land projecting  $1\frac{1}{2}$  miles southward, and forming the north-eastern point of Marathon bay. From the cape to the point forming the south-western extreme of the bay the distance is 4 miles, and from the line joining the two the bay is about 2 miles deep, semicircular, and open to the south and south-east. Temporary anchorage in summer may be taken where convenient, the depths on the western side being 7 to 10 fathoms. Cape Marathon should not be rounded too closely, and the south-western point of the bay is foul and rocky.

The shore of the bay is a beach, and at the back of it on the north-west is the plain of Marathon, celebrated for the memorable battle in which Miltiades defeated the Persians, 490 B.C. The mountain torrents which run into the plain during the rainy season form, behind the north shore, a deep marsh; the waste water which reaches the sea is unfit for use. On the south-western side of the plain, Mount Mendeli or Pentlicus reaches 3,640 feet above the sea, and from quarries here was obtained the white marble with which the Athenian temples were built. For continuation of this coast, see page 156.

*Charts 1556, 426.*

**EUBCEA or EURIPO.**—The island of Eubœa (pronounced Evvia) or Euripo is upwards of 100 miles in length in a north-westerly and south-easterly direction, with an irregular breadth, varying from less than 4 to about 18 miles. It is generally mountainous, the highest elevation being Mount Delphi (ancient Dirphi) (*Lat. 38° 37' N., Long. 23° 51' E.*), which rises 5,730 feet above the sea, its summit being scarcely ever free from

*General charts 1657, 426, 2836a, b.*

*Charts 1556, 426. Var. 3° 20' W.*

snow. Mount Pyxaria, north-westward of Mount Delphi, is 4,400 feet high, Mount Okhi, at the southern end of the island, is 4,840 feet high, and on the western coast, Mounts Kurumbliia and Kandili of the  
 5 Kandili mountains are respectively 3,994 feet and 3,072 feet high; farther to the north-west, the elevations are from 1,000 to 3,000 feet above the sea. The general formation of these mountains is grey limestone and clay-slate.

The plains south-eastward are generally cultivated with corn and  
 10 olives, but the plains of Oreos, north-westward, are more particularly appropriated to the vine, from which a light red wine is made, the common beverage of the Greeks, and a staple article of trade. The principal towns are Khalkis, situated in the narrowest part of the strait of that name, Xero Khori near the north-west extreme, Kumi  
 15 near the cape of that name on the north-east coast, and Kárystos at the head of the bay of the same name at the southern end of the island. The villages are few, and generally on elevations at some distance from the beach. The population of the island in 1896 was 103,265.

Eubœa island is separated from the main by a very narrow strait  
 20 anciently called the *Euripus*, and spanned by a bridge (*see* page 163). To the northward of the bridge, the space is called Talanta or Evoikos channel, and that to the southward Evripos or Euripo channel; but the wider space between the south end of Eubœa island and the mainland is named the Petali gulf.

25 *Charts 1820, 1597.*

**Kárystos bay** (*Lat. 37° 59' N., Long. 24° 26' E.*), at the south end of Eubœa, is  $3\frac{1}{4}$  miles wide at the entrance, deep and clear of danger except on the western shore, where it is rocky and foul; it is exposed to all southerly winds. Vessels unable to proceed through  
 30 the Doro channel against strong north-easterly winds cannot do better than anchor in this bay; but in entering under sail, be prepared for the heavy variable squalls which blow from the high land; in anchoring, veer a good scope of cable, and have a second anchor ready to let go, as the holding ground, sand, or sand and shell, is indifferent.

35 A good berth is in 16 fathoms, with Paximadion islet (44 feet high) just open of the inner western point of the bay, and for small vessels a little further in. A sailing vessel should not, however, go too far in, as the winds may be light and baffling when leaving, and there is frequently an indraught into the bay. The old village,  $1\frac{1}{2}$  miles  
 40 inland, is in a ruined state and half deserted, but a new village has sprung up near the shore at the head of the bay, where there is a mole enclosing a good inner harbour, capable of sheltering small vessels of 10 to 12 feet draught.

This mole, which is about 440 yards in length, leaves the shore

*General charts 1657, 426, 2836a, b.*

*Charts 1820, 1597. Var. 3° 20' W.*

just westward of the ancient castle. Small vessels loading or unloading lie with their sterns secured to the wharf on the northern side of the harbour, where there are also landing steps, at which there is a depth of 7 feet. The eastern part of the harbour is shallow, and dries in places. In the centre of the harbour there are depths of from 12 to 15 feet over a mud bottom, and of from 4 to 7 feet alongside the wharf mentioned above. 5

The population in 1896 was 1,498.

At some distance up the hills eastward of the ruins of the castle are some ancient quarries, in which a few years ago there remained several columns; some nearly finished, and others still adhering to the marble rock by a small part only. These columns were of extraordinary dimensions, one measuring 65 feet in length by  $4\frac{1}{2}$  feet in diameter. The side of the hill downwards is strewn with fragments in all directions, and there appears to have been an inclined plane or road by which they were transported to the sea; their magnitude must have rendered this operation a most difficult one. The view from these quarries is magnificent, and amply repays the labour of ascending to them. 10 15

**Landmarks.**—A white chapel, which is conspicuous, stands on the islet situated on the western shore of the bay, and in the town is a white church which forms a good mark. 20

**Light** (*Lat. 38° 01' N., Long. 24° 25' E.*).—A light is exhibited from the head of the mole on the northern side of the entrance to the harbour. 25

**Supplies.**—Fresh meat and provisions, which are plentiful, including potatoes and onions, may be obtained at the town of Kárystos, and game abounds during the season, especially woodcock. Water is scarce.

**Communication** is maintained once a week by steamer with Ergasteria bay. The town of Kárystos is also a telegraph station. 30

**Winds.**—At the commencement of a gale from the northward, the wind under the land at Kárystos is light and variable, but as it gains strength, it blows down from the hills in heavy variable squalls, and at times for a few minutes appears to make the anchorage a lee shore, but there need be no apprehension, as the wind does not suddenly veer from north to south, but gives sufficient warning. For east coast of Eubœa island, see page 167. 35

*Plan 1788, Petali islands and anchorages.*

**PETALI ISLANDS.**—These islands and islets lie off the south-western coast of Eubœa island, north-westward of Kárystos bay; the group consists of two islands (Megalo and Xero) on the south, and six islets on the north, the whole occupying a space of about  $4\frac{3}{4}$  miles north and south, and  $2\frac{1}{2}$  miles east and west. 40

*General charts 1657, 426, 2836a, b.*



*Plan 1788, Petali islands and anchorages. Var. 3° 20' W.*

**Megalo island** (*Lat. 38° 00' N., Long. 24° 16' E.*), the south-western of the group, is more than  $2\frac{1}{2}$  miles in diameter, and 1,285 feet high. Xero,  $1\frac{3}{4}$  miles in length north and south, and 610 feet high, lies only  $1\frac{1}{2}$  cables north-eastward of Megalo, to which it is connected by a ridge with one fathom of water on it, apparently the remains of a mole.

**Trago islet** lies to the north-west, and in the middle of the entrance of the bight between Xero and Megalo; from it a shoal, with less than 3 fathoms, extends  $1\frac{1}{2}$  cables to the southward. Midway between Trago islet and Megalo there is snug anchorage for small vessels in 7 fathoms, sandy bottom.

**Phundo (Phunti) and Praso islets**, north-west of Trago, are 2 cables from each other, and between them and Trago there is anchorage in from 9 to 12 fathoms, sand and gravel.

**LIGHT.**—A white iron beacon tower stands on the south extreme of Phundo islet, from which a light is exhibited.

**Lamberusa**,  $4\frac{1}{2}$  cables north-west of the north end of Xero, is the largest of the six islets; a bank extends nearly a cable south-eastward from its south point, between which bank and Xero the passage is deep and clear.

**Shoals.**—The two little islets of Makro and Avgo are the north-western of the group, and two shoals with a depth on each of  $3\frac{1}{2}$  fathoms lie  $304^\circ$  true  $3\frac{3}{4}$  cables and north-westward  $1\frac{1}{4}$  cables respectively from the north-west extremity of Makro islet. Another patch, with 3 fathoms water on it, lies  $1\frac{1}{2}$  cables north-westward from the centre of Avgo islet; the water is deep outside these shoals. From the clearness of the water around these islands the dangers will probably be seen, but their vicinity should be given a wide berth.

**Supplies.**—No fresh water is to be obtained at the Petali islands, and what is necessary for the few inhabitants has to be brought from Marmari bay, to the north-eastward. A few olives, grapes, and a small quantity of corn is grown. Rabbits, quails, and partridges are found. The islands are resorted to by sponge divers and fishermen, and occasionally coasters anchor for shelter.

**The currents** run strongly between the islands, and are much influenced by the prevailing winds.

**Directions.**—In running for shelter under the lee of the Petali islands from southerly gales which prevail in the winter months, there is no danger in coasting the western side of Megalo island, and when the peak of Trago islet is open of the northern point of Megalo, a vessel may haul in for the anchorage between Phundo and Praso on the one side, and Megalo and Trago on the other, anchoring in mid-channel, in

*General charts 1597, 1657, 426, 2836a, b.*

*Plan 1788, Petali islands and anchorages. Var. 3° 20' W.*

9 to 12 fathoms, between the western extreme of Trago and Praso islet. At night the light on the south point of Phundo islet will facilitate reaching the anchorage.

Vessels wanting to refit may enter the inner anchorage, between Trago and Megalo, and anchor in 7 fathoms, sand, good holding ground, with a smooth sea in all winds. For sailing vessels bound to the southward, the outer anchorage is preferred, as the wind shifts suddenly from south to north, and it can be left with facility.

Sailing vessels bound through the Doro channel, and having to bear up from strong north-easterly gales, will not generally be able to reach these anchorages, for the gales come on suddenly and blow with such violence from the mountains northward of Kárystos, that it is almost impossible to carry sufficient sail to beat up.

**XERO PASS** (*Lat. 38° 02' N., Long. 24° 18' E.*).—Xero island is separated from the coast of Eubœa island by a passage called Xero pass, with a depth of 6 fathoms, and 1¼ cables wide between the 5-fathoms lines. At the northern part of the pass, shallow water extends from the coast of Eubœa nearly half-way across, but by keeping on the Xero side 6 fathoms water can be carried through.



Megalo island.

Phundo peak.

Xero island.

View from the Four-foot rock.

Phundo peak seen between Xero and Megalo islands.

**Four-foot rock.**—Nearly 2¼ miles north-westward from Paximadion islet, the western entrance point of Kárystos bay, is a point called Cape Roxo, 280° true, 8¼ cables from which and nearly 5 cables from the shore is a rock having only 4 feet water on its south-eastern part, and called Four-foot rock. The shoal under the depth of 3 fathoms is three-quarters of a cable long south-east and north-west.

Phundo peak, in line 312° true with the north-east extreme of Megalo island, leads south-west of the shoal.



Mount Hymettus.

Megalo island.

View from the Four-foot rock.

Mount Hymettus in one with Avlabo point bearing 265° true.

**Shoal.**—At 7 cables westward of Four-foot rock is another shoal, with 2½ fathoms on it, lying in line between Cape Roxo and Avlabo

*General charts, 1597, 1657, 426, 2836a, b.*

*Plan 1788, Petali islands and anchorages. Var. 3° 20' W.*

point of Megalo, distant from the former  $1\frac{1}{2}$  miles. Marmari point, the northern entrance point of Marmari bay, in line with the eastern extreme of Xero island,  $347^\circ$  true, leads close westward of the shoal; 5 the point should therefore be shut in with the eastern extreme of Xero. Marmari point  $342^\circ$  true just touching the extreme of land forming the east side of Xero pass, or slightly open, leads between the above dangers.

**Cape Roxo** (*Lat.  $37^\circ 59'$  N., Long.  $24^\circ 21'$  E.*) is difficult to 10 distinguish, not being in sufficient relief from the high land at the back; at a cable south-westward of it, is a shoal with 5 feet water on it. Vessels with a southerly wind intending to run through Xero pass will avoid the above dangers by keeping about a mile from Megalo, and by borrowing on the Xero shore in the pass, may enter Marmari 15 bay without difficulty, where there is anchorage off the houses in from 17 to 12 fathoms, mud, but it is seldom resorted to.

*Chart 1597, Petali gulf and eastern part of Euripo channel.*

**Akio islet and Dipsa rock.**—At  $5\frac{1}{2}$  miles north-westward of Megalo island, and 2 miles westward of the southern extreme of the 20 point surmounted by Mount Viglia (about 4 cables south-east of which is Elapha islet) is the small low islet of Akio; and  $2\frac{1}{4}$  miles farther north-westward is another but smaller islet or rock named Dipsa, which lies  $2\frac{3}{4}$  miles  $98^\circ$  true from Cape Marathon and about midway between it and Cape Strongylo on the coast of Eubœa island. There are no 25 dangers in the neighbourhood of these islets.

**LIGHT.**—A light is exhibited from a white iron beacon tower on the summit of Dipsa rock, at an elevation of 56 feet.

**Stura island.**—This island, at the northern end of the Gulf of Petali, is triangular in shape, with its northern side  $1\frac{1}{4}$  miles in length 30 east and west, thence tapering southwards upwards of  $1\frac{1}{2}$  miles. Its coast line is irregular, and bordered here and there by shallow patches, and having several small islets and rocks in its vicinity, the shoals around which are steep-to. The group forms with the coast of Eubœa the sheltered bay of Stura, but the water in it is too deep for anchoring.

35 **Telegraph.**—The village of Stura, situated about  $1\frac{1}{2}$  miles from the shore of Stura bay, is a telegraph station.

**Shoal.**—Three-quarters of a mile  $312^\circ$  true from Phonias, the north-western islet of the Stura group and between it and a point projecting from the coast of Eubœa on the north, is a 2-fathoms shoal. 40 Cape Strongylo, southward of Stura island, open of Petusi islet at the southern end of Stura,  $147^\circ$  true, leads westward of the shoal.

**Berdugi islets.**—Cape Agia Marina (*Lat.  $38^\circ 11'$  N., Long.  $24^\circ 05'$  E.*), on the main shore,  $4\frac{1}{2}$  miles northward of Cape

*General charts 1597, 1657, 426, 2836a, b.*

*Chart 1597, Petali gulf and eastern part of Euripo channel.*  
*Var. 3° 20' W.*

Marathon (page 151), is a bluff 713 feet high. South-eastward of it and separated from it by a passage three-quarters of a mile wide, are the four small Berdugi islets, and the least depth between them and the cape is 6 fathoms. 5

To the eastward of the Berdugi islets are the Stura group and shoals previously described, the passage between these two groups being deep and clear; the 2-fathoms shoal, north-westward of the latter group and the nearest hidden danger to the Berdugi islets, bearing from the lighthouse, 62° true, and distant  $1\frac{3}{4}$  miles. 10

Vessels may pass on either side of Berdugi islets, by giving them and the points of the coast a reasonable berth.

**Current.**—The currents at times are strong.

**LIGHT.**—A light is shown, at an elevation of 233 feet above the sea, from a stone tower on a dwelling, 21 feet high, erected on the summit of the largest and highest of the Berdugi islets.



Berdugi islet lighthouse.

**Cavaliani island**, at the entrance of Port Armyro Potamo, is  $1\frac{1}{2}$  miles in length north and south, with an average breadth of half a mile, and 568 feet high. Shallow water surrounds all its projecting points, which at the northern end extends off more than a quarter of a mile. A conspicuous ruin stands on the summit of the hill at the southern end of the island. 20

The passage dividing Petali gulf from Evripos channel between Cavaliani island and Cape Agia Marina on the south-west, is  $1\frac{1}{4}$  miles wide, deep and clear. 25

**Port Armyro Potamo** (*Lat. 38° 15' N., Long. 24° 08' E.*), or Salt river (from a small pool or salt spring below the level of the sea at its head), runs in about 3 miles north-eastward from Cavaliani, with deep water, but it is seldom visited even by boats. The principal entrance is north of Cavaliani island, as the southern end is only separated from the coast of Eubœa by a narrow deep passage with shoals on either side. 30

**EVRIPOS or EURIPO CHANNEL.**—Having passed between Cape Agia Marina and Cavaliani island, the Evripos channel opens out and continues north-westward, and then west-north-westward for about 25 miles as far as Burj. 35

**Limiona bay**, on the mainland, is situated about  $3\frac{1}{4}$  miles north-westward from Cape Agia Marina. A jetty 200 feet long, with a

*General charts 426, 2836b.*

*Chart 1597, Petali gulf and eastern part of Euripo channel.*

*Var. 3° 20' W.*

- depth of 22 feet water at its outer end, is situated on the west side of the bay, for the convenience of vessels loading hematite iron ore, brought down from the mines at Grammatice, in the Marathon district, by a narrow-gauge railway some 9 miles in length. A screw mooring buoy is laid down, and it was intended to arrange for the shipping of 1,000 tons of ore daily.

- Vessels bound for this bay have to stop at Ergasteria bay (Lavrion) for clearance.

110,200 tons of iron ore were shipped from the Marathon district in 1898.

- Rocks**, within half a mile of the shore, are reported northward and north-westward of Cape Kalamo, which lies  $4\frac{1}{3}$  miles north-westward of Limiona bay.

**Apostolos bay**, on the mainland, about 3 miles west-north-westward of Cape Kalamo, possesses salt springs similar to those at Port Armyro Potamo, with water mills and storehouses.

*Chart 1554, Talanta channel and western part of Euripo channel.*

- At 5 miles west-north-westward of Apostolos bay is Oropos bay, where there is anchorage and landing, and on its eastern point a wind-mill.

- LIGHT** (*Lat. 38° 19' N., Long. 23° 49' E.*).—A light is shown, at an elevation of 18 feet, from a white iron beacon tower on a concrete base, 13 feet high, erected on the east point of Oropos bay.

*Chart 1597, Petali gulf and eastern part of Euripo channel.*

**Aliveri bay**.—At Aliveri bay, in the north-eastern part of the Evripos channel, there is anchorage in 15 or 16 fathoms, rather close in, but the holding ground is good.

- LIGHT**.—A light, elevated 30 feet, is shown from an iron column, with iron hut attached, 22 feet high, situated on the head of the breakwater at Aliveri.

**Communication**.—Steamers running between the Piræus and Volo stop occasionally at Aliveri, which is a telegraph station.

- Water**.—No fresh water can be obtained.

*Chart 1554, Talanta channel and western part of Euripo channel.*

- Port Eretria**.—The little Port Eretria and village of Eretria, with an isolated hill 427 feet high, on which is the site of the ancient Acropolis, is on the north side of Evripos channel, nearly opposite Oropos bay.

**Shoals**.—The islets of Vathya to the eastward of the port are surrounded by numerous rocks and shallow patches, the latter extend-

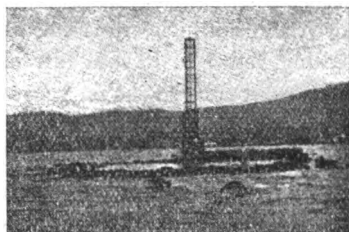
*General charts 1597, 426, 2836b.*

*Chart 1554, Talanta channel and western part of Euripo channel.*  
*Var. 3° 30' W.*

ing about 2 miles eastward of the port, and  $1\frac{1}{4}$  miles westward, the whole ranging one to  $1\frac{1}{2}$  miles from the shore. A rocky patch with 2 fathoms on it lies  $245^\circ$  true one mile from the lighthouse and a 5-fathoms patch a quarter of a mile farther in the same direction. Patches with  $1\frac{1}{2}$  to 3 fathoms on them also lie half a mile southward of the entrance to the port. These dangers should not be approached as there are no marks for avoiding them; they are steep-to, and generally visible in the day time. Vessels should keep rather on the southern side of Evripos channel. 10

North-eastward of these dangers there is sufficient anchorage space for small vessels in case of necessity, and it can be approached from the eastward by keeping along the Eubœa shore.

**LIGHT** (*Lat.  $38^\circ 23'$  N., Long.  $23^\circ 48'$  E.*).—A light is shown, at an elevation of 24 feet, from an iron column, with an iron hut attached, 19 feet high, erected on a rock near the end of the old mole on the western side of the entrance to Port Eretria.



Port Eretria lighthouse.

**Telegraph.**—The village of Eretria is a telegraph station.

*Plan 2802, Town and Strait of Euripo.*

**Burj point.**—The round rocky mass surmounted by a ruin called the Burj, on the eastern point of entrance to the outer port of Khalkis, is a good mark from the south-eastward; from Oropos bay the distance is about  $8\frac{1}{2}$  miles, and the channel clear. Vessels may anchor half a mile southward of the Burj, with the light bearing  $321^\circ$  true, in 42 to 48 feet, sand and mud. 25

**Caution.**—The bank off the mouth of the stream, situated about 3 cables south-eastward from the Burj, is reported to extend  $1\frac{1}{2}$  cables to the south-westward.

**Landmarks.**—The Venetian fortress and the two Venetian towers at Philla,  $1\frac{1}{4}$  miles inland and nearly 3 miles north-eastward of Burj point, are conspicuous. 35

**Burj spit.**—Depths under 6 feet extend from the Burj one cable south-westward, and depths under 18 feet extend  $1\frac{1}{2}$  cables to the west-south-westward. Abreast of this spit, depths under 18 feet extend three-quarters of a cable from the low sandy mainland shore, narrowing the channel with more than the latter depth to  $1\frac{3}{4}$  cables. 40

**Light-buoy.**—A can-shaped light-buoy, with superstructure, showing a *white flashing light every three seconds*, is moored in a depth of 18 feet off the end of Burj spit. 45

*General charts 1554, 426, 2836b.*

*Plan 2802, Town and Strait of Euripo. Var. 3° 30' W.*

**Burj channel.**—This channel, marked by the Burj on the eastern side and the lighthouse at Ailidos on the western side, leads from Evripas channel to Khalkis outer port. It has been dredged to a depth of 26 feet, but the depths in the outer port in places diminish to 21 feet, so that only vessels drawing less than  $19\frac{1}{2}$  feet can pass through without the assistance of buoys.

**LIGHT** (Lat.  $38^{\circ} 24' N.$ , Long.  $23^{\circ} 38' E.$ ).—A light is shown, at an elevation of 30 feet, from a square tower on a dwelling-house, 29 feet high, situated 39 yards from the point at Ailidos, opposite the Burj.



Burj narrows lighthouse.

**Winds.**—In entering the Burj and Steno channels, it is necessary in a sailing vessel to have a fair or leading breeze, or to have recourse to warping. Vessels running up from the south-eastward in summer with the sea breeze should be prepared to anchor at any moment, for it frequently happens that the wind does not blow home to the head of Evripas channel, but often on rounding the Burj the wind will be found blowing from the northward, having been diverted by the high range of Mount Delphi, and blowing fresh down from that mountain, it meets the sea breeze up the Evripas channel.

**Tidal streams.**—The tide in the Burj channel rarely exceeds 2 miles an hour.

**Directions for Burj channel.**—No direct leading marks can be given for this narrow and tortuous channel, and the eye must be the principal guide; but the following observations are given with the view of assisting the navigator. Approaching from the southward, keep the left extreme of Pasha Adasi (an islet visible over the low western point of Burj channel) in line with the right extreme of Fort Kara Baba (opposite the town of Khalkis), until the four houses, which are easily seen on Burj point, are in line with each other; then with the helm a-port, round Burj spit slowly and carefully until the vessel's head is pointed northward, keeping nearly in mid-channel or rather nearer the western shore.

A good mark for passing the Burj spit is the lighthouse in line with the highest hill near the town of Khalkis, until near the lighthouse. Then round it at the distance of a cable.

The yellowish hue of the shallow ground extending south-westward from Burj point will probably be seen in contrast to the deeper greenish water. After passing the lighthouse point at the distance of

*General charts 1554, 426, 2836b.*

*Plan 2802, The Town and Strait of Euripo. Var. 5° 30' W.*

a cable, keep well to the northward before steering towards the white light tower on Kolova rock. See below.

Approaching from the northward after passing the white light tower on Kolova rock, keep it in line with Perama point, bearing 5 315° true, until Burj light bears 176° true, whence steer to pass the lighthouse point at a distance of a cable; thence the white light-tower in line with the right extreme of Fort Kara Baba bearing 327° true, will lead clear of the spit.

Should the light-buoy marking the end of the Burj spit be in place, 10 it will be a good guide, in either case.

**KHALKIS OUTER PORT.**—The Burj channel leads into the outer of the two ports of Khalkis, which extends 3 miles in a north-north-westerly direction; both shores are bordered by banks, but throughout the central part there is anchorage, if necessary, in from 15 20 to 30 feet, soft mud; a convenient stopping place is northward of Pasha Adasi, in 20 to 23 feet. Around the shores of the outer port are several bays.

**Krianaru rock.**—This rock or islet is situated 307° true, 1 $\frac{1}{10}$  miles from Burj channel lighthouse, and marks the south-west 20 side of the channel. A depth of 3 fathoms will be found half a cable outside of this rock.

**Kolova rock.**—This isolated rock is itself 2 feet above the water, but a white light-tower, 24 feet high, has been erected on it. It bears 23° true distant 4 cables from Krianaru rock, and has a depth of 25 28 to 30 feet water around it and between it and the shallow bank 1 $\frac{1}{4}$  cables north-eastward of it. When in its vicinity, Fort Kara Baba open westward of the mill on the peninsula south of Euripo strait, leads westward of the rock.

**LIGHT** (*Lat. 38° 25' N., Long. 23° 37' E.*)

—A light is shown, at an elevation of 26 feet, from a white tower, with red ladder and balcony, on stone base, erected on the Kolova rock.

**Pasha Adasi.**—At the northern end of the outer port, 4 cables eastward of the entrance to Steno pass, which leads to the inner port, is Pasha Adasi, an islet about 1 $\frac{1}{4}$  cables in diameter, the peak of which, 60 feet high, will be seen when southward of Burj channel over the lighthouse point.

**Water.**—On the north-eastern shore, near the head of the outer port, a plentiful supply of water, which runs from the rocks, may be obtained, though it is not always



Kolova rock lighthouse.

*General charts 1554, 426, 2836b.*



*Plan 2802, Town and Strait of Euripo. Var. 3° 30' W.*

good for drinking, being impregnated with vegetable matter previous to entering the sea.

**Steno pass.**—This pass, leading from the outer to the inner port of Khalkis, is half a mile long and one cable wide, but shoal banks extend from both shores, leaving a channel in the middle about one-third of a cable wide, in which the plan shows depths of 20 to 36 feet.

**LIGHTS.**—A light is shown from an iron column, with iron hut attached, 26 feet high, erected on Perama point, south side of the eastern entrance to Steno pass.

Lights are also shown from iron lattice work beacons, one on either side of the western end of the pass.

**Directions for Steno pass.**—After passing the white light tower on Kolova rock, steer with Pasha Adasi a little on the starboard bow, and approach the pass keeping rather nearer the south entrance point, and then keep in mid-channel, being guided by the chart.

**Tidal streams.**—The stream at times runs through Steno pass at 2 knots an hour. See page 165.

**Inner port.**—The inner port of Khalkis is supposed to be the port *Aulis*, where the Grecian fleet assembled previous to the Trojan war. It is a natural circular basin 7 cables in diameter outside the 5-fathoms line, with an even mud bottom, and from 30 to 36 feet deep. Around the shores of the basin are two or three beautiful coves, and at the north-eastern part, the strait and town.

**Shoals.**—Vurkos bay, one of the coves just mentioned, is on the eastern side of the inner port. It is very shallow, and not more than 18 feet will be found half a cable westward of the line of its entrance points. From the shore of another cove situated in the south-west corner of the inner port, a shallow flat makes off  $1\frac{3}{4}$  cables.

A patch with 9 feet on it lies  $1\frac{1}{2}$  cables from the north shore, bearing  $258^\circ$  true  $4\frac{1}{2}$  cables from the bridge.

From the shore three-quarters of a cable westward of the bridge a spit extends southward the same distance, where there is a depth of 18 feet.

**Anchorage.**—The best anchorage is in the middle of the inner port.

**KHALKIS** or **EURIPO** (*Lat.  $38^\circ 27'$  N., Long.  $23^\circ 26'$  E.*).—The principal town of Eubœa island, with a population in 1907 of 10,958, is at that part of the island where it is separated from the mainland by the narrow strait called by the same name. It was a walled town, and further defended, where the walls were not washed by the sea, by a deep and wide dry ditch. The walls were turretted, slight, and built without regularity, and there appears to be no doubt

*General charts 1554, 426, 2836b.*

*Plan 2802, Town and Strait of Euripo. Var. 3° 30' W.*

of their Venetian origin. The area formerly enclosed was about 800 yards north and south by about 500 yards in breadth: the streets are narrow, but the houses are capacious. It had several gates constructed with great intricacy. The walls are being gradually demolished and have now almost disappeared, the moat also being filled in, but a ruined tower at the southern end of the wall is still conspicuous. 5

Another defence is Fort Kara Baba, on the main, which stands on an eminence about 195 feet high, commencing its rise immediately from the bridge. The fort overlooks and commands the town, but it is a misshapen structure of an oblong form, about 280 yards long, and 100 broad: the walls are in places so low that an active man might vault over them, and they are similar to and coeval with the walls of the town. 10 15

Outside the town to the north-east is a suburb appropriated to trade. The houses here are small, the shops contain general stores, articles of dress, or are coffee-houses, but there is little or no trade.

**Supplies.**—The market is well supplied, especially with fish; beef is difficult to be procured, but mutton is plentiful. Water is scarce and obtained chiefly from wells. 20

**Communication.**—Khalkis is connected by railway with Athens. Greek steamers from Athens and Volo call frequently. Telegrams can be sent to all parts of the civilised world.

**Euripo strait**, at the bridge, is 129 feet wide, and was dredged to 28½ feet deep, but in 1905 it was reported that there were only 21 feet. 25

**BRIDGE.**—This is a swing bridge in two parts, opening northward and fitting into masonry arranged for that purpose. The bridge is opened by day in response to a steamer's whistle (*see regulations*), when the current is not too strong. 30

The Khalkis-Athens railway traffic may cause a ship to wait a long time for the opening of the bridge. As the current in the strait may attain a rate of 7 and, in stormy weather, of 8½ miles an hour, it is advisable to anchor before entering the narrow channel, and not approach the passage till after the bridge is opened. 35

**Signals.**—By day, a white ball hoisted on a staff at the western end of the bridge denotes the bridge is open to a vessel coming from the south; and a red ball, for a vessel coming from the north. At night *green* lights are shown when the bridge is open, and a *red* light is shown on the centre of the bridge when the bridge is closed. 40

**Regulations** (*Lat. 38° 27' N., Long. 23° 36' E.*).—Vessels are not allowed to pass through the bridge against the current without special permission, and if this is obtained a guarantee must first be

*General charts 1554, 426, 2836b.*

*Plan 2802, Town and Strait of Euripo. Var. 3° 30' W.*

given covering all damage done to the bridge or shipping anchored in the port.

- On account of the traffic to and from the railway the bridge is never  
 5 opened between the hours of 7h. 30m. and 8h. 30m. a.m., 10h. and 11h. a.m., 4h. and 4h. 35m. p.m., and 7h. and 8h. p.m.

A steamer wishing to pass the bridge must give three long blasts on her whistle.

- Tonnage dues.**—The following are the dues imposed upon  
 10 merchant vessels passing through Euripo strait (*Lat. 38° 27' N., Long. 23° 36' E.*), vessels-of-war of all nations being exempted:—

- a. Vessels from 3 to 20 tons, 50 lepta per ton.
- b. Vessels of more than 20 and up to 50 tons, 40 lepta per ton.
- c. Vessels of more than 50 and up to 100 tons, 30 lepta per ton.
- 15 d. Vessels of more than 100 and up to 300 tons, 20 lepta per ton.
- e. Vessels of more than 300 tons, 15 lepta per ton.

The following table gives the times (standard time in Greece or 2h. 00m. 00s. fast on Greenwich mean time) at which the passage is, normally, available for ships:—

Moon's age (days).			Vessels bound north.		Vessels bound south.	
			h.m.	h.m.	h.m.	h.m.
0 and 15	-	-	8 28 p.m. to 2 34 a.m.	2 34 a.m. to 8 40 a.m.	2 34 a.m. to 8 40 a.m.	8 40 a.m. to 2 34 p.m.
			8 40 a.m. to 2 46 p.m.	2 46 p.m. to 8 52 p.m.	2 46 p.m. to 8 52 p.m.	8 52 p.m. to 2 46 a.m.
1	"	16	8 52 p.m. to 2 58 a.m.	2 58 a.m. to 9 04 a.m.	2 58 a.m. to 9 04 a.m.	9 04 a.m. to 2 58 p.m.
			9 04 a.m. to 3 10 p.m.	3 10 p.m. to 9 19 p.m.	3 10 p.m. to 9 19 p.m.	9 19 p.m. to 3 10 a.m.
2	"	17	9 19 p.m. to 3 22 a.m.	3 22 a.m. to 9 28 a.m.	3 22 a.m. to 9 28 a.m.	9 28 a.m. to 3 22 p.m.
			9 28 a.m. to 3 28 p.m.	3 28 p.m. to 9 43 p.m.	3 28 p.m. to 9 43 p.m.	9 43 p.m. to 3 28 a.m.
3	"	18	9 43 p.m. to 3 46 a.m.	3 46 a.m. to 10 04 a.m.	3 46 a.m. to 10 04 a.m.	10 04 a.m. to 3 46 p.m.
			10 04 a.m. to 3 58 p.m.	3 58 p.m. to 10 05 p.m.	3 58 p.m. to 10 05 p.m.	10 05 p.m. to 3 58 a.m.
4	"	19	10 05 p.m. to 4 10 a.m.	4 10 a.m. to 10 16 a.m.	4 10 a.m. to 10 16 a.m.	10 16 a.m. to 4 10 p.m.
			10 16 a.m. to 4 22 p.m.	4 22 p.m. to 10 25 p.m.	4 22 p.m. to 10 25 p.m.	10 25 p.m. to 4 22 a.m.
5	"	20	10 25 p.m. to 4 34 a.m.	4 34 a.m. to 10 40 a.m.	4 34 a.m. to 10 40 a.m.	10 40 a.m. to 4 34 p.m.
			10 40 a.m. to 4 46 p.m.	4 46 p.m. to 10 52 p.m.	4 46 p.m. to 10 52 p.m.	10 52 p.m. to 4 46 a.m.
6	"	21	10 52 p.m. to 4 58 a.m.	4 58 a.m. to 11 04 a.m.	4 58 a.m. to 11 04 a.m.	11 04 a.m. to 4 58 p.m.
			11 04 a.m. to 5 10 p.m.	5 10 p.m. to 11 16 p.m.	5 10 p.m. to 11 16 p.m.	11 16 p.m. to 5 10 a.m.
7	"	22	11 16 p.m. to 5 22 a.m.	5 22 a.m. to 11 28 a.m.	5 22 a.m. to 11 28 a.m.	11 28 a.m. to 5 22 p.m.
			11 28 a.m. to 5 34 p.m.	5 34 p.m. to 11 40 p.m.	5 34 p.m. to 11 40 p.m.	11 40 p.m. to 5 34 a.m.
8	"	23	11 40 p.m. to 5 46 a.m.	5 46 a.m. to 11 52 a.m.	5 46 a.m. to 11 52 a.m.	11 52 a.m. to 5 46 p.m.
			11 52 a.m. to 5 48 p.m.	5 48 p.m. to 0 04 a.m.	5 48 p.m. to 0 04 a.m.	0 04 a.m. to 5 48 p.m.
9	"	24	0 04 a.m. to 6 10 a.m.	6 10 a.m. to 0 16 p.m.	6 10 a.m. to 0 16 p.m.	0 16 p.m. to 6 10 a.m.
			0 16 p.m. to 6 22 p.m.	6 22 p.m. to 0 28 a.m.	6 22 p.m. to 0 28 a.m.	0 28 a.m. to 6 22 p.m.
10	"	25	0 28 a.m. to 0 25 p.m.	0 25 p.m. to 6 32 a.m.	0 25 p.m. to 6 32 a.m.	6 32 a.m. to 0 25 p.m.
			6 32 a.m. to 0 38 p.m.	0 38 p.m. to 6 49 p.m.	0 38 p.m. to 6 49 p.m.	6 49 p.m. to 0 38 a.m.
11	"	26	6 49 p.m. to 0 58 a.m.	0 58 a.m. to 7 04 a.m.	0 58 a.m. to 7 04 a.m.	7 04 a.m. to 6 49 p.m.
			7 04 a.m. to 1 10 p.m.	1 10 p.m. to 7 16 p.m.	1 10 p.m. to 7 16 p.m.	7 16 p.m. to 7 04 a.m.
12	"	27	7 16 p.m. to 1 22 a.m.	1 22 a.m. to 7 28 a.m.	1 22 a.m. to 7 28 a.m.	7 28 a.m. to 7 16 p.m.
			7 28 a.m. to 1 34 p.m.	1 34 p.m. to 7 40 p.m.	1 34 p.m. to 7 40 p.m.	7 40 p.m. to 7 28 a.m.
13	"	28	7 40 p.m. to 1 46 a.m.	1 46 a.m. to 7 52 a.m.	1 46 a.m. to 7 52 a.m.	7 52 a.m. to 7 40 p.m.
			7 52 a.m. to 1 58 p.m.	1 58 p.m. to 8 00 p.m.	1 58 p.m. to 8 00 p.m.	8 00 p.m. to 7 52 a.m.
14	"	29	8 00 p.m. to 2 10 a.m.	2 10 a.m. to 8 20 a.m.	2 10 a.m. to 8 20 a.m.	8 20 a.m. to 8 00 p.m.
			8 20 a.m. to 2 22 p.m.	2 22 p.m. to 8 28 p.m.	2 22 p.m. to 8 28 p.m.	8 28 p.m. to 8 20 a.m.
15	"	30	8 28 p.m. to 2 34 a.m.	2 34 a.m. to 8 40 a.m.	2 34 a.m. to 8 40 a.m.	8 40 a.m. to 8 28 p.m.
			8 40 a.m. to 2 46 p.m.	2 46 p.m. to 8 52 p.m.	2 46 p.m. to 8 52 p.m.	8 52 p.m. to 8 40 a.m.

*General charts 1554, 426, 2836b.*

*Plan 2802, Town and Strait of Euripo. Var. 3° 30' W.*

**Tides** (Lat. 38° 27' N., Long. 23° 36' E.).—It is high water, full and change, at Euripo bridge, at Vh. 15m.; springs rise about 2 feet, neaps are irregular.

On the northern side of the bridge the mean spring rise is about 2½ feet, but in the months of July, August, February, and March the rise is 3 feet. On the southern side of the bridge the spring rise is seldom as much as 2 feet. The neap range is irregular, and at times only a few inches. With southerly and south-westerly gales a sudden rise of 6 feet has been experienced.

**Tidal streams.**\*—At full and change, the stream commences to run to the northward at about 8h. 15m. a.m., or nearly at half ebb, and to the southward at 2h. 20m. p.m.; except for a few days at neaps, both streams set about 6 hours each way, attaining at springs a velocity of 6 or 7 knots an hour, which gradually decreases to neaps. During neaps the stream is irregular and its strength from half to one knot an hour, but at times during this period there is but little tidal movement.

Both streams are regular in the changes from New moon to the First quarter (or within a day or two of its occurrence), then irregular for 2 or 3 days; again regular to Full moon and until the Last quarter, and again irregular for 2 or 3 days, and then again resume a regular course. During the regular period the change of the stream is about 40 minutes later each day, but much influenced by the winds; slack water occurs at half tide by the shore, and usually only lasts for about 10 minutes. When the stream has run for about 3 hours from the north to the south of the bridge, it will be high water on the north, and low water in the basin on the south; and vice versâ with the other tide.

With southerly and south-westerly gales the velocity of the tidal stream from south to north is increased to 8 or 8½ miles an hour for the first day of the gale; followed, probably on the second day, by a rush of equal strength to the southward.

The tidal stream in Steno pass and Burj channel seldom exceeds 2 miles an hour.

**Directions for Euripo strait.**—With proper care and commanding speed steam vessels, excepting the largest, may pass through without difficulty in any condition of weather or current.

It will be necessary for a sailing vessel at anchor to be under way before slack water, which cannot be calculated at times to 15 or 30 minutes, and be prepared to pass the bridge immediately the ball is shown as a signal that it is open. The ball is shown from a staff on the

\* From observations and remarks by Captain Mansell. R.N.

*General charts 1554, 426, 2836b.*

*Plan 2862, Town and Strait of Euripo. Var. 3° 30' W.*

western side of the bridge. At present there are no tugs in the vicinity.

**The strait north of the bridge** is bordered on either side by shoal water, which leaves in the central part a narrow but clear passage. At the point of the Quarantine establishment (in ruins) on the main, 4 cables from the bridge, rocky shallow ground extends off half a cable, and also the same distance from Tekies (Tekes) point on the opposite side of the strait; the extremes of these shoal spits are marked by light-buoys, the passage between them is about 120 yards wide, and with the buoys in position there will be no difficulty by keeping in mid-channel.

**Light-buoys.**—The extremity of the shoal ground off the quarantine establishment is marked by a green light-buoy showing a *green flashing light every three seconds*, and the extremity of the shoal ground off Tekies point by a red light-buoy showing a *red flashing light every three seconds*.

**Caution.**—The position of the buoys is not to be relied upon.

• **Telegraph cable.**—A cable crosses the strait between the shoal spits just mentioned.

**Water.**—There is no water to be procured on this side of the bridge.

**LIGHTS** (*Lat. 38° 28' N., Long. 23° 36' E.*).—At about 100 yards from the end of the point on the west side of the strait about 2 cables north-north-eastward of the Quarantine establishment, is a frame lighthouse, from which a light is shown.

On the east side, at 40 yards within Kaki Képhali point, from a dwelling 41 feet high, a light is exhibited elevated 68 feet above the sea.

**Rocks.**—A patch of shoal ground, with less than 6 feet on it, lies with its shallowest spot east-north-eastward, distant  $1\frac{3}{4}$  cables from Kaki Képhali lighthouse; shoal water under the depth of 24 feet extends  $1\frac{1}{2}$  cables further eastward.

*Chart 1554, Talanta channel, &c.*

A shoal with  $4\frac{1}{4}$  fathoms water over it lies 22° true, distant 8 cables from the Kaki Képhali lighthouse and two-thirds of a mile from the nearest point of Eubœa island. Other points of the coast of Eubœa island farther northward and forming the anchorage are foul half a mile off.

**North roadstead of Khalkis.**—The space from Kaki Képhali lighthouse northward to the parallel of Cape Gaidaro, being

*General charts 1554, 426, 2836b.*

*Chart 1554, Talanta channel, &c. Var. 3° 10' N.*

the south-eastern part of the Talanta channel, may be considered the northern roadstead of Khalkis, as, with the exception of the shoals just alluded to, there are anchoring depths all over it, in from 17 to 10 fathoms, mud bottom, sheltered from the westerly winds by Cape Gaidaro and the shoal ground, which extends nearly two-thirds of a mile north from it; in the winter season it would be advisable to anchor within about a mile of the town of Khalkis. 5

The North roadstead of Khalkis, with lights, is repeated at pages 227, 228, where the Talanta channel is described. 10

*Chart 1820, Andros island and Doro channel.*

**DORO or KAPHIRÉUS CHANNEL** (*Lat. 37° 58' N., Long. 24° 37' E.*), between Eubœa and Andros islands, is 6 miles wide: the wooded sides of Eubœa present an agreeable aspect, in contrast with the dry rocky appearance of Andros island. The north-western side of the channel is bounded by the base of Mount Okhi, which forms generally a steep rugged coast with a small bay or cove here and there, the only off-lying danger being a rock which shows well at low water, and is awash at high water, lying a long cable east-north-eastward of Kastri point, the north-east entrance point to the bay of that name; within it are some shallow patches. 15 20

**Mount Okhi**, about 7 miles northward of Cape Mandili (the south-eastern extreme of Eubœa), rises 4,840 feet high: it has three distinct peaks, and its sides a short distance down on the north, and south, are clothed with groves of splendid chestnut trees. 25

**Myrto or Mandili islet.**—At the foot of Cape Mandili is the islet of Myrto or Mandili, 286 feet high, nearly a mile in length, and separated from the cape by a deep passage a third of a mile wide. (For south-west coast of Eubœa, *see* page 152.)

**Cape Doro.**—The coast of Eubœa, from Myrto islet, trends north-east and north for 13½ miles to Cape Doro, a high bold prominent headland and the north-western entrance point of Doro channel from the north-eastward. The little islet of Doro, 93 feet high, lies about one-third of a mile from the eastward face of the cape. (For north-east, and north coasts of Eubœa, and mainland to the northward, *see* page 237.) 30 35

The south-eastern side of Doro channel is bounded by the north-west coast of Andros island, which is steep and rugged, with no off-lying dangers. Sailing vessels should not approach this part of the island too near in light winds, on account of the current. Andros island is frequently obscured during autumn and winter, both with south-west and north-east winds. 40

*General charts 1554, 426, 2836a, b.*

*Chart 1820, Andros island and Doro channel. Var. 3° 10' W.*

- LIGHT** (Lat. 37° 58' N.,  
Long. 24° 43' E.).—At Cape  
Phassa, the north-western  
5 point of Andros island, and  
about half a mile inland, is a  
circular tower on a dwelling,  
70 feet high, from which a  
light is exhibited at an eleva-  
10 tion of 695 feet above the sea.



Cape Phassa lighthouse.

- Andros island, north-west coast.**—From Cape Phassa this coast trends, with a slight curve east-north-east 5 miles to Cape Kabanos, the south-east  
16 entrance point of Doro channel from the north-eastward. *See page 191.*

- Between Cape Phassa and Goremi (Kharakas) point, nearly 6 miles to the southward, the coast of Andros island is irregular, clifty with a few sandy bays, and has deep water all along. On Pyrgo point 1½ miles to the southward of Cape Phassa is a conspicuous ruined tower.  
20 Cape Nikolo, 2½ miles southward of Cape Phassa, is the termination of a tongue of land projecting a little more than half a mile from the coast, and in approaching from the northward appears like an island till within 10 miles of it, when the intervening land becomes visible.

*Plan 1827, Gavriou bay.*

- 25 At three-quarters of a mile eastward of Goremi point is Kastri head, a clifty bluff about 200 feet high, forming the western entrance point of Port Gavriou. *See page 171.*

*Chart 1820, Andros island and Doro channel.*

- Winds.**—The navigation of Doro channel is one of the difficulties  
30 of the Levant, especially in sailing vessels, as the strong northerly winds which prevail during the summer months may be said scarcely to cease for upwards of four months of the year, viz., from the beginning of May until the end of August or middle of September; and after the autumnal equinox, although they do not so constantly prevail, gales  
35 from that quarter are as heavy and frequent as from other points of the compass.

- It is to be observed that these strong winds through the Doro channel, which form such an impediment to vessels bound to the eastward, are often during summer strictly local, and do not interfere with the sea  
40 breezes which blow freshly into the gulfs and bays during the day; nor with the land winds which draw off the mountains at night. In this season it is common for vessels to pass Cape Sunion in the forenoon with a fresh breeze from the Gulf of Athens and carry it nearly as far

*General charts 1820, 426, 2836a, b.*

*Chart 1820, Andros island and Doro channel. Var. 3° 10' W.*

as the north end of Zea, where they meet a strong breeze blowing through the Doro channel.

In these cases it is not advisable to attempt to pass northward of Zea, for although there may be every appearance of being able to weather the island, there is danger in too close an approach, for it is almost certain that near the northern point the wind will fail, with a heavy surf beating on the rocky shore, a strong current setting towards it, and the water too deep for anchoring. See Mykoni channel, page 194.

**Current.**—The general current from the Dardanelles, which sets towards the western part of the archipelago, is much accelerated by the strong northerly or north-easterly winds, and causes the stream in the Doro channel to run with great strength. In December, 1905, during a strong northerly wind, H.M.S. *Sentinel* experienced a southerly set of 7 knots. In working through the Doro with a moderate breeze from the north-east, a weatherly current for some miles has been found on the coast of Eubœa. See page 241.

In September, 1916, the current between the Doro and Zea channels was observed to set 300° true, at the rate of three-quarters of a knot, with a light southerly breeze.

*Chart 2836b, Grecian archipelago, northern part.*

**KALOYERI ROCKS** or **the MONKS** (Lat. 38° 10' N., Long. 25° 17' E.).—These consist of two detached rocks, one large, the other small, lying in the fairway between the Doro channel and ports to the eastward. The Great Kaloyeros is a barren volcanic heap about 120 feet high, with a chain of rocks extending south-eastward, free from all known hidden dangers, and bears 67° true distant 25½ miles from Cape Kabanos, the north point of Andros island. The Great Kaloyeros, at a distance of 8 or 9 miles to the north-west, has been taken for a sail. It makes in the form of a sugar loaf, except when viewed from the south-west, when it appears split in two.

The Little Kaloyeros is only about 4 feet above the water, and about the size of a small boat, with a reef extending about half a cable to the southward, on which the sea breaks; it lies three-quarters of a mile north-eastward of the Great Kaloyeros. The depths close around the reef are from 7 to 15 fathoms, with deep water outside.

*Plan 1827, Garrion bay.*

**ANDROS ISLAND.**—**Gavriion bay.**—Vessels unable to work through the Doro channel, and having to seek shelter during strong northerly gales so prevalent during the summer months, especially from May to September, instead of beating about in these gales under the lee of Andros, or bearing up for Port Agios Nikolaos of Zea,

*General charts 1820, 426, 2836a, b.*



*Plan 1827, Gavrion bay. Var. 3° 10' N.*

Ports Raphti, Mandri, or Legrana bay, near Cape Sunion, at the entrance to the Gulf of Athens, are recommended to take shelter either in Kárystos bay in Eubœa, or in Gavrion bay on the south-western side of Andros, and thereby save much time and anxiety.

Gavrion bay affords ample and excellent anchorage anywhere eastward of the port, between the islands fronting it and Phurnos bay. The depth of water immediately eastward of the port is 7 to 9 fathoms, gravel, sand, and weeds; but the best anchorage is in from 17 to 20 fathoms, between Megalo islet and Phurnos bay. The bay is open to the southward, and vessels finding it inconvenient can put to sea or enter Port Gavrion, where the wind from this quarter never blows home.

**LIGHT** (*Lat. 37° 52' N., Long. 24° 44' E.*).—A light, elevated 225 feet above the sea, is shown from a circular tower on a dwelling, 26 feet high, on Kastri head, the western entrance point of Port Gavrion.

**Gavrion islets** are a group of seven islets and rocks, of which Megalo, the largest, is more than 6 cables in length north and south, narrow, with a hill 190 feet high at its southern end; the other islets extend north-west and west from it about 7 cables. The east and west sides of the group are clear of danger, but shallow water extends north and south from the islets, except the south end of Megalo; Turleta, the south-western islet, is also clear. From Plati, the north-western of the group, shallow water extends  $1\frac{1}{2}$  cables to the north-north-eastward, narrowing the passage between it and Vovi shoal to  $3\frac{1}{4}$  cables.

**Vovi shoal.**—This shoal, in the approach to the anchorage, lies between Plati and Akra point, the east point of Port Gavrion, having a channel 3 cables wide and 6 to 9 fathoms deep between it and the latter point. It is 2 cables in length north-east and south-west, three-quarters of a cable in breadth, and has only 2 feet water on its shoalest part, near the south end, which is named Vovi rock. In the centre of the shoal is a patch with one fathom, and near the north end one with  $1\frac{1}{2}$  fathoms water on it; in other places the depths vary from 2 to 4 fathoms. This danger is much in the way of vessels passing between the islets and Port Gavrion to the anchorage off Phurnos bay.

**Directions.**—The summit of Jura island,  $181^\circ$  true, open westward of the summit of Gaidaro (120 feet high), the western islet of the Gavrion group, leads westward of Vovi shoal; Turleta, the small sugar loaf islet and south-western of the group, bearing  $186^\circ$  true, open of the extreme of Gaidaro, also leads westward of the shoal.

The monastery on the hill eastward of Phurnos bay,  $68^\circ$  true, open its own breadth of Koruni head, leads between Vovi shoal and the

*General charts 1820, 2836a.*

*Plan 1827, Port Gavrion. Var.  $3^{\circ} 10'$  W.*

shoal extending northward from Plati islet; or a vessel may enter Phurnos bay, northward of Vovi shoal, by passing Black rock (off the eastern side of entrance to Port Gavrion) at the distance of a cable.

*Mount Saravli.*



*Cape Nikolo,  
bearing  $347^{\circ}$   
true.*

*Kastri head.*

*Gaidaro.*

*Akomates.*

*Megalo I.  
bearing  
 $40^{\circ}$  true.*

Entrance to Port Gavrion,  $10^{\circ}$  true, 4 miles.

**Port Gavrion** (*Lat.  $37^{\circ} 53'$  N., Long.  $24^{\circ} 44'$  E.*) is about 5  
7 cables deep,  $2\frac{1}{2}$  cables wide in the entrance, and carries from  
13 fathoms water at the entrance to 3 fathoms at a cable from its  
head, over a bottom of sand, mud, and weeds; the port is open south-  
ward, and terminates at its head in a tranquil sandy beach, fully indi-  
cating its safety, as southerly winds never blow home, and any great 10  
sea or swell is broken by the islets fronting it.

To a small vessel seeking shelter in a southerly gale, after having  
passed through the Doro channel it is conveniently situated, but it is  
difficult of access in a sailing vessel during strong northerly winds,  
owing to the heavy gusts from the high land, and also from the 15  
baffling winds which prevail when the wind is moderate from that  
quarter.

From Akra point (the eastern point of the port) eastward, are  
several small shingle beaches interrupted by rocky projecting points,  
off which are rocks above water, besides patches of foul ground nearly 20  
2 cables from the shore; then follows a sandy bay named Petros,  
which is separated from Phurnos bay by the small peninsula forming  
Koruni head, distant a little less than a mile from Akomates, the  
nearest Gavrion islet, and between which vessels may anchor. *See*  
views of entrance to Port Gavrion on plan and above. 25

**Supplies, Water.**—Supplies can be obtained in small quantities  
at Port Gavrion, and water by sinking a well in the plain near the  
shore. In Leukos bay, on the east side of Cape Colonna,  $1\frac{1}{2}$  miles  
south-eastward of Koruni head, a plentiful supply of water may be  
obtained from a spring which trickles down a ravine on the eastern 30  
side of the bay.

**Communication.**—There is steamboat connection with Con-  
stantinople, Crete, Syra, and other ports.

Port Gavrion is also a telegraph station.

For further description of Andros island, *see* page 188. 35

For continuation to Saloniki and the north, *see* Chapter VI., page  
227, and to Smyrna, *see* Chapter VIII., page 350.

*General charts 1820, 2836a.*

## CHAPTER V.

THE CYCLADES, OR WESTERNMOST OF THE SOUTHERN ISLANDS:  
OF THE ARCHIPELAGO.

VARIATION decreasing about  $8\frac{3}{4}'$  annually.

*Chart 2836a, Grecian archipelago, southern part. Var.  $3^{\circ} 20' W$ .*

**THE CYCLADES** are so named from their surrounding Delos, the birthplace of Artemis (Diana) and Apollo, and belong to the kingdom of Greece. The principal islands, commencing on the south-west,  
5 are Milo, Siphano, Serpho, Thermia, Zea, Syra, Jura, Andros, Tinos, Mykoni, Paros, Antiparos, Naxos, Amorgos, Nio, Polykandro, Sikinos, Santorin, Anaphi, &c. Zea and a portion of Andros are described in Chapter IV. and the remainder of the above islands in this.

Phalconera and Karavi islands lie 22 miles west-north-westward and  
10 35 miles westward respectively from Milo and near the track of vessels from the Elaphonisos channel to the Siphano channel (for description see pages 95, 96).

**Ananes islets** (*Lat.  $36^{\circ} 33' N.$ , Long.  $24^{\circ} 09' E.$* ).—Situated about 46 miles  $82^{\circ}$  true from Cape Malea, and 9 miles  $240^{\circ}$  true from  
15 Paximadion islet, at the south-western end of Milo, is a cluster of small rocky islets, the highest of which, named Ananes, is sharp pointed and about 150 feet high; they can be seen at some distance, and when bearing  $102^{\circ}$  true distant 7 miles, appear as seven islets. It would be well not to approach them too closely.

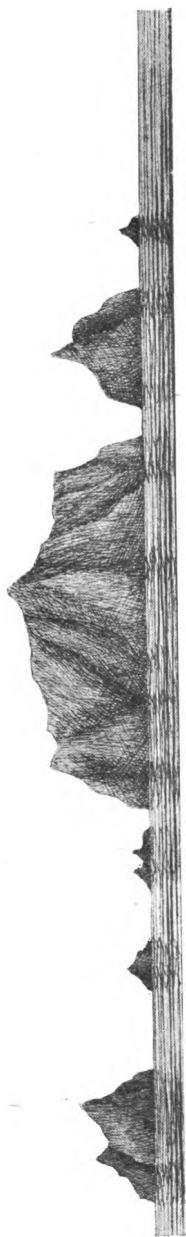
20 See view opposite.

*Chart 2051, The islands of Milo, &c.*

**MILO (MILOS) ISLAND**, the south-western of a group of four islands and several detached islets, is of volcanic formation, mountainous, and about 11 miles in length east and west. The eastern and  
25 western portions are about 6 miles in breadth, but its width in the centre is reduced to one mile by a bay which runs in on the north-west side. Near its south-west end, Mount Elias, the summit of which commands extensive views of the islands of the archipelago and the mountains of Crete, rises 2,538 feet above the sea. Although the surface of  
30 the island is generally rugged and mountainous, with a naked and sterile appearance, the valleys and low grounds are extremely fertile, producing corn, cotton, oil, wine, oranges, and other fruit in abundance, as well as pasture for cattle.

*General chart 2836a.*

To face page 172.



Ananes islets bearing  $100^{\circ}$  true, 7 miles.



*Chart 2051, The islands of Milo, &c. Var. 3° 20' W.*

Volcanic agency is still active, as shown by its hot springs and mines of sulphur and alum; the hottest of these springs is on the beach at the head of the large inlet or bay, and about three-quarters of a mile from the old town Paleo Khori, the ground around being impregnated with sulphur. In the side of a little rocky height above, is another in a natural cave known as the Bath, which is frequented by persons afflicted with scrofulous diseases. To the southward of the height, the land is low and marshy with salt pans, which cause malaria.

**Trade.**—The exports include manganese, sulphur, millstones, and gypsum; the imports consist only of daily necessities.

**Port Milo.**—On the north-western side of the island is a large inlet, extending 5 miles to the south-east, having a breadth of one mile between the town of Kastro and Kalamaria point, and widening to 2 miles at its head, with generally high bold shores, and deep water throughout. The bay affords accommodation for a large number of vessels, and is much frequented by those bound to Constantinople, Smyrna, and elsewhere, when unable to proceed during northerly or north-easterly gales.

**Akrathi islets.**—Two-thirds of a mile north-westward from Lakida point, the north-eastern entrance point of Port Milo, are the two rocky islets of Akrathi nearly united, with a deep and clear passage between them and the point.

**LIGHT** (*Lat. 36° 47' N., Long. 24° 24' E.*).—A light is shown, at an elevation of 253 feet, from a square masonry tower, 23 feet high, with dwelling attached, on the north-west point of the western Akrathi islet.

**Monopodro rock,** a remarkably bold rock, 15 feet high, lies 2 cables off the point next southward of Lakida point, and bears from the latter 205° true, distant half a mile.

**Bombarda point.**—At 3½ miles within the entrance, on the north-eastern side, is Bombarda point, a bluff headland, and half a mile eastward of it is the village or Skala of Adamandos, which in 1896 contained 673 inhabitants, and at which there is a good landing pier.

A white pyramidal monument, in memory of those who fell in the Crimean war, is situated 2 cables to the north-westward of the lighthouse, and the church at Skala is very conspicuous.

**Light.**—A light is exhibited on Bombarda point, at an elevation of 134 feet, from an iron mast, 20 feet in height, attached to an iron building.

**Anchorage.**—Vessels may anchor in any convenient berth, in from 10 to 25 fathoms, mud; the farther out the better holding

*General chart 2836a.*

*Chart 2051, The islands of Milo, &c. Var. 3° 20' W.*

ground, and a sailing vessel will more readily get to sea in the event of a southerly wind. The bluff points of Bombarda and Kalamaria in line with the summit of Anti Milo 296° true, and the village 338° true, will be a fair berth for a large vessel. The water shoals rapidly, and if the anchor is in 20 fathoms the vessel's stern, when swung inshore with a good scope of cable out, will be in about 12 fathoms; the holding ground is good. The squalls off the southern shore are at times heavy.

In the approach to the bay, Milo island on some bearings from a distance, appears like two peaked hills. Anti Milo being high, round, and conspicuous, is an excellent distant mark.

**Kastro** (*Lat. 36° 45' N., Long. 24° 26' E.*).—The town or large village of Kastro stands on a rocky elevation on the north-eastern side near the entrance to Milo bay, and is the seat of the local government: combined with Tripiti and Plakis close to it, on the south-east and east, it contains the greatest portion of the inhabitants of the island, who in 1907 amounted to 5,393, mostly fishermen and sailors, who formerly were reputed the best pilots in the archipelago.

**Supplies.**—Small quantities of provisions may be obtained, but very little water.

**Communication.**—There is weekly communication by steamer with Syra, and thence with the rest of the world. Kastro is a telegraph station.

**Anti Milo (Antímilos) island** is rather more than 2 miles in extent north and south, and 1½ miles east and west, somewhat triangular in shape, with its pointed end to the south. It is 2,250 feet high, rugged, steep all round, and uninhabited except by a few wild goats. Vlykladion point, its south end, is nearly 5 miles from the nearest part of Milo, and bears 281° true from Cape Vani, a high hill of craggy rocks, and the western entrance point of Milo bay.

From the northward, Anti Milo is easily distinguished at a great distance by its rounded form, and appears considerably higher than Milo. The channel between it and Milo is deep and clear, but sailing vessels should avoid the calms and sudden gusts of winds by not passing too close to the shore on either side.

**Paximadion islet**, three-quarters of a mile off Psalis point, the south-western end of Milo, is surrounded by rocks, and should be given a wide berth. The channel between the islet and Psalis point is two-thirds of a mile wide, and clear of danger if a mid-channel course be maintained.

**LIGHT** (*Lat. 36° 38' N., Long. 24° 19' E.*).—A light is exhibited at an elevation of 85 feet, from a white iron tower on a

*General chart 2836a.*

*Chart 2651, The islands of Milo, &c. Var. 3° 20' N.*

masonry base, 10 feet high, situated on the summit of Paximadion islet.

**Zephyr rock.**—At 7 miles eastward of Psalis point is Zephyros point, from which a shallow bank extends 4 cables to the southward with 4 and 5 fathoms water on it: at the extremity of the bank is a dangerous sunken rock with less than 6 feet water over it, named Zephyr rock, with deep water close to it. The south-eastern extreme of Polino island in line with Steli point, bearing 54° true, leads well southward of the rock.

**Steli point** (*Lat. 36° 40' N., Long. 24° 52' E.*), the south-eastern extreme of Milo, is the termination of a narrow projecting tongue of land with a large rock at its extremity and shallow water 1½ cables southward of it.

**Ktenia rocks.**—Nearly 3½ miles 131° true from Steli point are two isolated rocks above water, and steep-to, named Ktenia or the Pigeons. Caution is necessary when in their vicinity at night.

**KIMOLOS or ARGENTIERA ISLAND** (named Kimolos by the Greeks, and Argientiera by the Romans, from silver mines which formerly existed) is 4½ miles in length north and south, by 3½ miles in breadth, 1,305 feet high, with irregular and generally rocky shores. In 1907 it contained 2,015 inhabitants, and the only town or village, called Kimolos, is on its south-eastern side. The ancient town was at Liniko on the south-western coast, where Agios Andrea islet, now about a cable from the shore, was formerly united to the coast and formed a small harbour; the islet has still remains of houses on it. The barren soil affords but little sustenance for the inhabitants, who mostly lead a sea-faring life; 1,700 tons of iron ore were shipped from this island in 1898; a considerable quantity of building stone is also exported.

**Poloni pass.**—Kimolos is separated from Milo by a passage half a mile wide, bordered on either side by shallow water, especially at the southern end of Kimolos, where the shoal, on which the sea at times breaks, extends more than half-way across, leaving a channel 7 fathoms deep, and more than a cable wide, called Poloni pass.

**Poloni rock.**—The shallow rocky ground which extends southward from the south point of Kimolos borders the coast of the island eastward at the distance of a third of a mile; at the eastern entrance to Poloni pass, and 5 cables northward from Pilo islet, is Poloni rock, with 4½ fathoms water on it, and 6 fathoms between it and the rocky ground bordering the coast of Kimolos.

**Agios Georgio islet.**—Agios Georgio is a narrow, irregularly formed islet about half a mile in length north and south, with rocks above water close to its south-western end. At a third of a mile westward of its northern end is a rock above water, with shoal ground

*General chart 2836a.*



*Chart 2051, The islands of Milo, &c. Var. 3° 10' N.*

extending from it 3 cables south-westward; between the rock and islet there are from 6 to 10 fathoms water. Agios Georgio islet and the rock westward of it occupy a position nearly equidistant from Milo, 5. Kimolos, and Polino, and the water is deep in mid-channel all round.

**Pyrgui islet**, about 3 cables in extent, lies 7 cables northward of Agios Georgio, having a narrow passage between it and Kimolos; the islet has a narrow bank all round it.

**LIGHT** (*Lat. 36° 46' N., Long. 24° 35' E.*).—A light is shown, at 10 an elevation of 85 feet, from a square stone tower, 23 feet high, on a dwelling situated on the north extreme of Pyrgui islet.

**Temporary anchorages.**—In case of necessity during northerly winds, vessels might find temporary anchorage southward of Kimolos, with the above islets on the east, and Milo on the west; also, 15 with westerly winds, off the village of Kimolos.

**POLINO (POLYAIGOS)** was called also Isola Brusiata or Burnt island, from its great sterility. Cattle rearing is the principal occupation of the inhabitants, who only numbered 23 in 1896. It is 3½ miles in length north-west and south-east, and 1,170 feet high; 20 its coast, generally bold, is irregular, forming two or three little coves, with rocks above and below water here and there, and from a little islet on the west side sunken rocks extend off a cable.

A shoal lies at a distance of about 1½ cables from the shore at the north-western end of Polino, and on the eastern side of Pyrgui strait, 25 and 77° true from Pyrgui light.

**Pyrgui strait.**—Polino is separated from Kimolos by a channel nearly 9 cables wide, clear and deep, and called Pyrgui strait. In the navigation around and amongst these islands, the chart and the eye are the best guides.

30 **Maskula point**, with an islet off it, is a slight projection on the north-east side of Polino island.

**LIGHT.**—A light is shown, at an elevation of 453 feet, from a cylindrical tower, on a dwelling, 28 feet high, near Maskula point.

*Plan of Siphano on 1817.*

35 **SIPHANO (SIPHNOS) ISLAND** is 9½ miles in length, north-north-west and south-south-east, with an extreme breadth, near the southern end, of 4½ miles, whence it tapers to Cape Phillippo (Khersónisos), its north-west extremity. A range of mountains extends throughout, and Mount Agios Elias (*Lat. 36° 58' N., Long. 24° 42' E.*), 40 distinguished by a chapel on its summit, near the centre of the island, is 2,280 feet above the sea. Siphano is famous for the salubrity of its climate and the fertility of its soil, and produces corn, wine, oil, silk,

*General chart 2836a.*

*Plan of Siphano on 1817. Var. 3° 10' W.*

poultry, fruit, &c.; straw hats of a rough manufacture are exported, and a considerable trade is done in cattle and pottery. The inhabitants, in 1907, amounted to 3,777; they are quiet, civil, hospitable, and industrious, worthy of their picturesque, fertile island and 5  
delightful climate.

In ancient times, Siphano was celebrated for its mines of gold and iron; the latter are on the north-eastern side of the island, with a narrow, low entrance at the foot of a cliff, cut into the solid rock; the marks of the miners' tools were as fresh in 1844 as if only then 10  
done. The mines may be entered by each person bearing a torch, but after advancing a considerable distance, the explorers are stopped by the accumulation of rubbish. The smelting furnaces are cut out of the solid marble rock on the point shelving to the sea, and either by the sinking of the land, or rising of the sea, are now many of them under 15  
water, some quite submerged and others only partially so, and surrounded by the scorix of former days.\*

A group of villages, numerous for the size of the island, stand on a kind of elevated plateau towards the east, 890 feet above the sea; they are clean and exceedingly healthy, and present a most imposing 20  
appearance from seaward. The land around them is well cultivated, extremely fruitful, and abounding in springs of excellent water. The northern village of the group is the capital, or residence of the local authorities, is known by the name of Apollonia, and in 1896 had a population of 827. Several square windmills with fixed arms facing 25  
the north, from which quarter the wind generally blows, are erected on the ridge of land on which the town stands.

**Communication.**—There is weekly connection by steamer with Syra and Piræus. Siphano island is in telegraphic communication with the rest of the civilised world, the town of Kastro being the tele- 30  
graph station (*Lat. 36° 58' N., Long. 24° 45' E.*).

**Water** for shipping is not to be procured on the island, but live stock is plentiful.

**Anchorage.**—The island has no good ports; anchorage may be obtained by small vessels inside Kitriani island, in 15 fathoms, but the 35  
holding ground is indifferent, and at Port Pharos in better holding ground. Vessels may anchor in Platialos (Platys Yalos) bay with a northerly wind, if not blowing too hard; but the squalls off the high land are so heavy as to render it impossible to contend against them under sail. 40

Coasting vessels, in summer, anchor close under Kastro point, where there is an old dilapidated town, with a population in 1896 of 328,

\* Pausanias relates that in consequence of the Siphnians neglecting to send the tithe of their treasure to Delphi, the god destroyed their mines by an inundation of the sea.

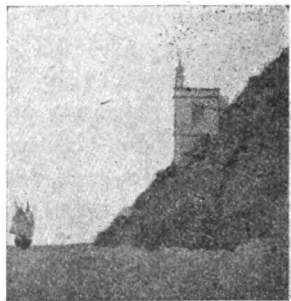
*Plan of Siphano on 1817. Var. 3° 10' W.*

and some remains of an ancient castle. Port Vathy, on the south-western part of the island, is fit only for boats, the holding ground being bad, except close in shore.

- 5 **Kamares bay**, open to the westward, is situated on the west side of Siphano island, and 3 miles southward of Cape Phillippo, the north extremity.

There are two or three other bays on the north-western coast, but they are open and exposed.

- 10 **LIGHT** (*Lat. 36° 59' N., Long. 24° 40' E.*).—A light is shown, at an elevation of 160 feet, from a column over a dwelling, 16 feet high, on the south side of Kamares bay.



Kamares bay lighthouse.

- 15 **Kitriani island**, off the south-east coast of Siphano island, is 340 feet high, nearly a mile long north-east and south-west, and half a mile wide. It is separated from Siphano by a channel
- 20 2 cables wide, with depths of from 5 to 20 fathoms, the only danger being a rock close off the west point of Kitriani.

- Dangers.**—The only outside dangers to be avoided are a rock, 3 feet high, lying 4 cables north-westward of Cape Phillippo, the
- 25 northern extreme of the island; and another rock with 4 fathoms water on it, situated  $4\frac{1}{2}$  cables south-eastward of the south-west end of Kitriani island.

*Chart 2836a, Grecian archipelago, southern part.*

- The passage between Cape Kondo, the south extreme of Siphano
- 30 and Kimolos, is  $6\frac{1}{2}$  miles wide, and, with the exception of the 4-fathoms rock just mentioned, is clear and deep.

- Siphano channel**, the passage between the rock off the northern end of Siphano island and Serpho to the north-west, is  $6\frac{1}{2}$  miles wide, and, with the exception of the rock off Cape Phillippo, is clear of
- 35 danger.

*Plan of Serpho on 1817.*

- SERPHO (SÉRIPHOS) ISLAND**, the next north-westward of Siphano, is nearly circular, about  $5\frac{1}{2}$  miles in diameter, and attains an elevation of 1,585 feet above the sea. It is generally sterile,
- 40 but produces a little corn, wine, and a small kind of onion. There are traces of ancient mines on the south-western part of the island, and lode-stone is still to be procured, there are also the remains of

*General chart 2836a.*

*Plan of Serpho on 1817. Var. 3° 20' W.*

a tower of white marble. Sériphos, the largest village in the island, stands on a curious conical hill, about three-quarters of a mile from the head of Port Livadhi. The whole population of the island in 1917 amounted to 4,490.

**Cyclops head** is the south-western point of Serpho island; and a large modern village called Mega Livadhi, with 590 inhabitants, is situated at the head of the inlet,  $1\frac{1}{2}$  miles to the north-eastward of it; the hills above the village are covered with mining works, and a conspicuous white church stands on a hill behind the village. Two loading jetties are situated on the south side of this inlet, and another on the northern side of the small cove close north of it. Large steamers can load alongside the piers at the rate of 1,200 tons a day; the iron ore is loaded by means of small trucks.

This is the chief mining port of the island; in recent years many buildings have been erected, including a hospital for the workmen.

**Kutala bay** is another inlet, about three-quarters of a mile deep, situated nearly 2 miles eastward of Cyclops head; in the north-western corner is a large village with a loading pier and two mooring buoys off it. The village has 100 inhabitants. The arrangements for loading are similar to those at Mega Livadhi, mentioned above.

**Dangers.**—The little islet of Mikró lies close to the south point of the island; nearly midway between it and the eastern point of Kutala bay, is a rock with less than 6 feet water over it, with deep water around, and difficult to be seen on account of the colour of the bottom. To avoid this rock, keep well outside the line of the islet and point.

Another shoal, with less than 6 feet water on it, lies nearly a quarter of a mile from the north horn (a bluff, 400 feet high), of Psarometokhion bay, on the north-west coast. With the above exceptions there are no off-lying dangers round the island.

**LIGHT.**—A light is shown, at an elevation of 212 feet above the sea, from a square tower, 32 feet high, erected on Point Spathi, the south-east point of Serpho island.

**Port Livadhi** (*Lat. 37° 08' N., Long. 24° 32' E.*), on the south-east side of the island, extends northward about  $1\frac{1}{4}$  miles, and is nearly a third of a mile wide. The water is rather deep, but at the head of the port the anchorage, in from 12 to 8 fathoms, sand and weed, is good in any weather; on the western side of entrance is a small reef nearly awash, close inshore. In a sailing vessel access is difficult except with a fair wind. In entering keep in mid-channel, give the inner point on the west, which is low, with a chapel and light station on it, a berth of a cable, and anchor where convenient.

The population of the port was 580 in 1896.

*General chart 2836a.*

*Plan of Serpho on 1817. Var. 3° 20' W.*

**LIGHT.**—A light is shown from an iron cross with iron column and hut, 21 feet high, situated on the inner point on the west side of Port Livadhi, close to and south-eastward of Livadhi village.

- 5 **Climate.**—During part of the summer the heat in the port is excessive; surrounded as it is by an amphitheatre of rocky hills, which hardly cool, the heat is nearly the same at all hours, and for days the thermometer may register 98° at 10h. p.m.

A cargo of 2,300 tons of iron ore has been loaded in four days.

- 10 The loading berth has a minimum depth of 21 feet, mud bottom, and the remainder of the port has ample and safe anchorage space for three or four steamers.

There are several other inlets round the island, but none of them useful as anchorages.

- 15 **Water.**—A little water may be procured from the wells on the low ground, at the head of Port Livadhi.

**Trade.**—131,925 tons of iron ore, valued at £43,975, were exported in 1905. In the same year 38 steam vessels of 61,480 tons, called for iron ore; of these 14 vessels of 21,770 tons were British.

- 20 **Consul.**—A British Consular Agent resides at Port Livadhi.

**Communication.**—There is weekly steamboat connection with Piræus, Syra, and the adjacent islands. Port Livadhi is also a telegraph station.

- 25 **Vus islet** is small, about a quarter of a mile in diameter, 435 feet high, bold, with deep water near it, lying  $1\frac{1}{2}$  miles east-north-eastward from Amyno point, the north-east entrance point of Port Livadhi, and one mile from the coast.

- 30 **Seriphópulon** (*Lat. 37° 15' N., Long. 24° 36' E.*), lies  $4\frac{1}{2}$  miles north-eastward of Serpho; this islet is  $1\frac{1}{2}$  miles in length, east and west, half a mile in maximum breadth, tapering to each end, and forming a curve northward, with steep cliffs on the south; it is about 650 feet high, bold, and clear of danger.

*Chart 2836a, Grecian archipelago, southern part.*

- 35 **Serpho channel.**—The passage between Serpho and Thermia on the north is 7 miles wide in its narrowest part, and called Serpho channel.

*Plan of Thermia on 1817.*

- 40 **Piperi islet**, situated 4 miles north-westward of Seriphópulon, lies in the middle of the eastern part of Serpho channel, between the eastern ends of Serpho and Thermia. It is 4 cables in diameter, inaccessible, with deep water around, and the currents are strong in its vicinity.

*General chart 2836a.*

*Plan of Thermia on 1817. Var. 3° 20' W.*

**THERMIA (KYTHNOS) ISLAND** is irregularly formed, 11½ miles in length, north and south, with an extreme breadth of about 4 miles; the highest of its hills near the centre of the island is 965 feet above the sea, and its coast line is indented with several little ports and coves. The island derives its modern name from the hot baths at its north-eastern part, and which are said to be of great efficacy in all scrofulous and rheumatic complaints, and many invalids resort thither in the summer from Greece and Turkey, but the accommodation is very indifferent. The population of the island in 1907 was 3,191.

There are only two towns or villages in the island; the modern capital, Kythnos, is about 1½ miles southward from Port Irene, and contained, in 1896, 1,967 inhabitants. At 1½ miles southward of Kythnos (sometimes called Messaria), and not far from the greatest elevation, is the village of Sillacca, containing a population of 2,386 in the year 1896. Here is a large grotto; a few veins of marble and chalk intersect the rock and form stalactites.

The ancient city (*Kythnos*) stood on the west coast, over a cliff about 600 feet above the sea, and between the ports of Apokrusis and Piskopi. The solitary grandeur, magnitude, and solidity of the masonry of the ruins attest its former magnificence; the ruins have acquired among the islanders the name of *Hebræo Kastro* or Jews' castle, a name applied in contempt by Greek peasants to any ancient building erected by strangers.

**Trade.**—The island produces barley, corn, wax, wine, and honey, in addition to which, 30,750 tons of iron ore were shipped in 1907; it abounds in red-legged partridges, and there are also sheep, goats, and pigs.

**Shipping.**—In 1907 the island was visited by nine steamers, of which six were British.

**Communication.**—There is connection by steamer twice a week, with Piræus and Syra, and once a week with the island of Amorgo and others of the Cyclades. Sillacca is a telegraph station.

**Port Merika** (*Lat. 37° 24' N., Long. 24° 24' E.*), on the western side of Thermia, and nearly six miles northward of Cape Dimitri, the south-west point of the island, is a narrow inlet about 5½ cables deep, open to the north-west, with a rock above water lying a cable off its south point of entrance. Inside, the shelter is good, but a vessel under sail experiences difficulty in leaving except with a fair wind.

There are several small bays on the western side of the island, but useless as anchorages.

*General charts 1657, 2836a.*

*Plan of Thermia on 1817. Var. 3° 20' W.*

**LIGHT.**—A light is shown, at an elevation of 75 feet, from a quadrangular tower on a dwelling-house, 18 feet high, erected on the west extreme of the north entrance point to Port Merika.

- 5 **Port Agios Stéphanos** (*Lat. 37°23' N., Long. 24°28' E.*).—At 8½ miles north-eastward of Cape Dimitri is Cape St. John, the eastern extreme of the island; and about a mile south-westward of the latter is the entrance to Port Agios Stéphanos. The port extends in a little more than three-quarters of a mile, and is about the same distance in  
10 breadth; a projection from the head of the port forms an inlet on either side of it. A sunken rock lies nearly a cable off the south-eastern extreme of this projection, and a small shoal with 3 feet water on it, which can always be seen, lies 1¾ cables off the southern entrance point of the port. The port is open to the southward, and the water  
15 is deep in the outer part, but near its head there are from 5 to 20 fathoms. It is available for anchorage, but, as there is nothing to be obtained, it is seldom visited.

- Port Irene** is on the east coast, 2¼ miles from Cape Képhalos, the northern extreme of the island. A large building, in which are  
20 the hot baths, is easily distinguished, and when it bears 253° true should be steered for. The only danger is a rocky patch with 3 feet water over it, on the northern side of entrance; it can, however, always be seen and avoided. The best anchorage is in a little creek on the south-east side of the port, where small coasters lie in safety.

- 25 The hot baths, about 200 yards from the beach at the head of the port, are extensive, but much out of repair. The waters vary in temperature, the hottest being 131°; they are brackish and disagreeable to the taste, but clear; by overflowing, they cover the ground to the sea with a porous crust, here and there of a reddish colour from  
30 the iron, which with salt are their principal ingredients.

Two rocks with less than 6 feet lie close together about 1½ cables from the shore at a distance of 8 cables northward of Port Irene light station.

- 35 **Light.**—A light is shown, at an elevation of 51 feet, from a metal support, 26 feet high, at the bathing place on the southern entrance point to Port Irene.

**The coast** all round is clear of off-lying dangers.

*Chart 1657. Gulf of Athens.*

- 40 **Thermia (Kythnos) channel**, between Thermia and Zea islands, is a little more than 6 miles wide, clear and deep. The current in this channel runs to the south-west with much strength, and stronger than between Zea and Helene island, although close inshore along the south-eastern side of Zea it sets to the north-eastward. (For Zea island, see page 147.)

*General charts 1657, 2836a.*

*Chart 1542, Syra island. Var. 3° 10' W.*

**SYRA (SYROS) ISLAND** is irregular in shape,  $9\frac{1}{4}$  miles in length north and south, with an extreme breadth near the southern end of  $5\frac{3}{4}$  miles. It is hilly, the two greatest elevations being Mount Nites, rising over the south coast, and Mount Pyrgo (*Lat. 37° 27' N., Long. 24° 56' E.*), 1,415 feet high, about 4 miles from the northern end; the hills are chiefly formed of mica-slate, though near the sea there is marble of an inferior quality. The island is well cultivated, and produces barley, cotton, figs, olives, wheat, wine, &c. A large quantity of vegetables are sent to Athens and Constantinople in the early season. The population of the island, according to census taken in 1907, was 27,350. 5 10

The ancient Greek city stood on the site of the present capital town of Syra, on the shore of Syra harbour on the eastern side of the island. In the middle ages the inhabitants retreated for security from the pirates who then infested the archipelago, and built another town on the summit of the steep peaked hill in the rear, now called Old Syra. The island was of no importance till the war of the revolution, when a great influx of refugees from different parts of Greece and the islands, especially from Khios and Psara, occurred; on the site of the ancient city the modern town gradually rose to its present flourishing condition, and, being in a central position, is the emporium of the archipelago, and its harbour a port of call for shipping, more especially steam vessels of nearly all nations, and from all parts. 15 20

**Coast.**—The coast line of Syra is sinuous, forming numerous bays and coves, but they are all open and exposed. It is generally bold, with but few off-lying dangers. 25

**Delphini rock**, with 2 fathoms of water on it, lies one-third of a mile north-westward of the south point of Delphini bay, on the west coast, about  $5\frac{1}{4}$  miles northward of Cape Vilostasi (Vigklastasi or Vilostasion), the south-west point of Syra island. The rock lies with the east side of Barbarusa islet close to the coast,  $1\frac{1}{4}$  miles to the northward, in line with Trakhyta head, the point three-quarters of a mile northward of the rock bearing 18° true; the islet should therefore be kept well open of the point to pass westward of the rock. 30 35

**Grammata head** (*Lat. 37° 30' N., Long. 24° 53' E.*), about  $2\frac{1}{4}$  miles northward of Trakhyta head, and one mile southward from Cape Trimesson, the northern extremity of the island, is conspicuous to a vessel approaching Syra from the westward. This perpendicular rocky precipice stands out conspicuously from the background in the shape of a bell, and is of a light yellow colour. 40

**Trypa rock.**— $3\frac{3}{4}$  miles eastward of Cape Vilostasi is Xodra head, and about  $1\frac{1}{2}$  miles to the east-north-eastward is Phokia point, the east extreme of Syra island. At  $4\frac{1}{2}$  cables, 197° true from Phokia point, is

*General charts 1815, 2836a.*



*Chart 1542, Syra island. Var. 3° 10' W.*

Trypa rock, with  $1\frac{1}{2}$  fathoms, the summit of a shoal 2 cables in extent north-west and south-east, and which is steep-to. Cape Vilostasi, open of Xodra head  $252^\circ$  true, leads southward, and the whole of Gaidaro island (see below) open of Phokia point  $348^\circ$  true, or the land to the northward in line with the west end of Gaidaro island  $345^\circ$  true, leads eastward of the shoal.

**Aspro islet**, a quarter of a mile in length, somewhat triangular in form, steep at the southern end, and sloping towards the north, lies a mile east-south-eastward from Phokia point. The water is deep off its southern end, but a tongue of shallow rocky ground extends 3 cables in a  $327^\circ$  true direction from the west point of the islet, having near its extremity a rock awash. Another rocky ledge extends  $1\frac{1}{2}$  cables to the north-eastward of the islet, and outside this ledge, at  $2\frac{1}{2}$  cables from the islet, is a shoal patch with a least depth of  $3\frac{3}{4}$  fathoms falling suddenly to deep water.

Vessels passing Aspro islet should give it a wide berth. The passage between the north-west tongue and the shallow water around Phokia point is two-thirds of a mile wide, and the distance between the tongue and Trypa shoal three-quarters of a mile. The passage between Aspro and Syra may be safely used by keeping the western end of Gaidaro just open of Phokia point, or the north-eastern extreme of Syra touching the west end of Gaidaro (*Lat.  $37^\circ 25' N.$ , Long.  $24^\circ 59' E.$* ).

**Whistle-buoy.**—A red and white whistle-buoy is moored in a depth of 4 fathoms on the shoal extending to the north-eastward of Aspro islet, but it is not to be relied upon.

**Gaidaro island.**—This island is about three-quarters of a mile in length, one-third of a mile in breadth, and about 128 feet high. It lies  $1\frac{1}{4}$  miles east-south-eastward from the extremity of Syra mole, and affords some shelter to the anchorage when the wind is from that quarter.

A small islet lies one cable from the eastern side of Gaidaro island, with 3 fathoms of water between them.

**A rock**, nearly awash, lies a quarter of a cable off the north point of Gaidaro island.

**Anchorage.**—The distance of Gaidaro island from the shore south-west of it is about half a mile, and the space between affords tolerably good anchorage in from 12 to 18 fathoms water, coarse sand, and shells with patches of weeds, sheltered from north-easterly winds, which at times blow strong. On a fine day, when the water is smooth, the anchor may be seen in 12 or 13 fathoms. There is a good summer anchorage, but open from South to East.

*General charts 1815, 2836a.*



To face page 185.]



View of Syra from the mouth of the harbour.

*Chart 1542, Syra island. Var. 3° 10' W.*

**LIGHT** (Lat. 37° 25' N., Long. 24° 59' E.).—On the western summit of Gaidaro is a circular stone tower, 96 feet high, from which a light is shown at an elevation of 224 feet.

*Plan of Syra harbour on chart 1542.*

**Syra town** in 1907 contained 18,132 inhabitants, nearly all engaged in mercantile pursuits; a quay with numerous warehouses and handsome houses of white marble attest its mercantile importance. In a handsome square in the centre of the town is the town hall and other public offices.

There is an Italian opera, and a Greek theatre, and though the streets are narrow and crooked, they are well paved, lighted, and clean. Old Syra, practically connected by buildings with the modern town, is perched on the remarkable conical hill which commands the port; the ascent is rather toilsome, and on the summit is the church of Agios Georgios, from which is an extensive view. Old Syra contained 3,272 inhabitants in 1896, mostly Roman Catholics, the descendants of the Genoese and Venetian settlers.

The new city of late years has grown back and upward to a second hill, which, with Old Syra, present from the mouth of the harbour the appearance of two distinct conical hills covered with white houses, each hill being crowned with a church.

There is an Anglican church, divine service being held at 10h. 30m. a.m. on Sundays, excepting in June, July, and August, when most of the congregation reside in the interior of the island. It is the principal seat of missionaries for the Levant, who have schools here. There is likewise a British burial ground. See views on chart 1542 and opposite.

**A British Consul** and Vice-consul reside here, also Consul or Consular agents for nearly all nations.

**The climate** of Syra is remarkably healthy, extreme cold or frost being unknown, snow falling once or twice in three or four years and melting immediately. In summer it is occasionally sultry in calms, or with south or south-west winds, and in the lower part of the town, which is built and paved with crystalline limestone, it is then disagreeably hot. The prevailing wind, however, is from the north, and blows throughout the summer, keeping the air cool, especially in the more elevated parts of the town, with occasional lulls or changes to the south. It rarely rains, except in the winter, and the springs of the

*General charts 1542, 1815, 2836a.*



Gaidaro island lighthouse.

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*Plan of Syra harbour on chart 1542. Var. 3° 10' W.*

town being insufficient for supplying water, it is collected from the roofs and terraces of the houses into cisterns, of which every house has one. This water is used for drinking by the inhabitants, who prefer it, as it is soft and good.

**SYRA HARBOUR** (*Lat. 37° 26' N., Long. 24° 57' E.*), the only port for shipping, is on the eastern side of the island, where the coast forms a bay open to the eastward. On the north side of the bay a small peninsula, formerly an islet, projecting southward and prolonged by a mole 1,290 feet in length, covers an area about 4 cables deep, with depths of from 10 to 3½ fathoms, good holding ground, affording excellent shelter in bad weather.

A channel, 330 feet long and 28 feet deep, leading to the patent slip, has been dredged.

The bay is bordered all round by a narrow bank, which in the southern part is rocky and extends 2 cables from the shore; about half a cable within its 3-fathoms edge, north-west of the New Lazaretto, is a cylindrical stone beacon 13 feet above the sea, with three horizontal red bands; northward of the beacon the depth on the bank is 1½ fathoms.

Steamers of 20 feet draught lie safely at the head of the harbour, with sterns secured to bollards on the quay. Larger vessels lie farther out, with their sterns fast to bollards on the mole.

To avoid impeding the navigation of the harbour, and for the benefit of fresh and cool air, it is advisable for men-of-war to secure their sterns to the east mole after anchoring. This should not be too much relied on in a heavy blow, as the mole is only 3 feet above the water, and being built of loose blocks of stone, does not offer a very solid foundation. Battleships that have anchored here have laid out anchors over the mole so as to grasp the sea face. A vessel may haul her stern close to the mole, there being deep water within 20 yards of it. There are no bollards within 470 feet of the outer end of the mole.

**Pilots.**—On arriving outside the harbour, the vessel is boarded by a pilot, who points out and, in the case of a merchant ship, pilots them to a berth.

**LIGHTS.**—Two lights, placed vertically, are shown from an iron post on an iron hut, 39 feet high, situated 56 feet within the outer end of the mole.

**Outer anchorage.**—A large ship requiring coal and not wishing to go inside should go into 10 fathoms water, sandy bottom, and moor with the New Lazaretto point bearing 185° true, and the conspicuous chimney on the beach 259° true. With a northerly wind, and farther out, the coal lighters will not generally be able to remain alongside.

*General charts 1542, 1815, 2836a.*

*Plan of Syra harbour on chart 1542. Var. 3° 10' W.*

Anchorage outside the breakwater is not recommended on account of the danger of fouling telegraph cables, of which there are eight.

**Communication.**—Telegraph cables belonging to the Eastern Telegraph Company, laid direct from Syra to the Piræus, Thermia, Khios, Paros, and Tinos islands, and Megalo Kastron (Crete), afford connection with the principal ports of the archipelago and the general world system. *See also* page 18.

The telegraph office is open always.

There are frequent and regular lines of mail steamers to Piræus. The following are the principal steamship companies maintaining a regular service with Syra:—Cunard, monthly from Liverpool, Patras, and Corfu; Moss, monthly from Liverpool, Gibraltar, and Malta; Pappayani, fortnightly from Liverpool; Messageries Maritimes, fortnightly from Marseille, Patras, and Saloniki. There is also connection between Syra and the other Cyclades and Crete, by local steamers twice a week. Thus outside the archipelago there is a more or less regular connection with London, Liverpool, Marseille, Gibraltar, Malta, and Crete.

**Meteorological table.**—*See* page 502.

**Quarantine.**—Vessels arriving from infected ports, or with foul bills of health, are sent to the island of Rhenea, when the term of quarantine exceeds five days; under that period, quarantine can be performed in the harbour of Syra. There is a hospital supported by the municipality and by voluntary contributions. Patients of all nationalities are admitted free of charge.

**Repairs, &c.**—An establishment belonging to the Forges et Chantiers de Syra Company is capable of effecting large repairs to hull and machinery.

Vessels up to about 600 tons have been built here, but of late years this industry has considerably declined. The wood comes chiefly from Constantinople.

**Supplies, Water.**—Fresh meat, vegetables, and other provisions can be obtained. Water is scarce, and bad in summer; it is supplied in water tanks.

**Coal.**—About 80,000 tons of coal are imported annually, and 10,500 tons are usually in stock. There are 33 lighters of from 20 to 160 tons, and from 800 to 1,500 tons can be loaded in 24 hours.

**Patent slip** (*Lat. 37° 26' N., Long. 24° 57' E.*)—*See* Appendix I., page 498.

**Trade.**—The exports consist chiefly of leather, vegetables, tobacco, emery stone, valonia, citrons in brine, &c.; the chief imports being raw hides, grain, rice, linseed oil, salt fish, coal, woollen and cotton yarns, &c.

*General charts 1542, 1815, 2836a.*

*Plan of Syra harbour on 1542. Var. 3° 10' W.*

In 1907, the exports were valued at about £104,254, of which £36,195 went to the United Kingdom; and the imports at about £293,212, of which £105,339 came from the United Kingdom.

- 5 In the same year, 1,399 steam-vessels of 967,109 tons, and 1,291 sailing-vessels of 30,754 tons, entered the port of Syra; of these 135 steam-vessels of 212,686 tons were British.

*Chart 1815, Islands of Tinos, &c.*

- NATA (LANADO)** (*Lat. 37° 22' N., Long. 25° 04' E.*) is a  
10 small flat islet about 25 feet above the sea, lying  $5\frac{1}{2}$  miles south-east-  
ward of Gaidaro lighthouse, and nearly on the parallel of the south  
end of Syra. There are 3 and 4 fathoms water around its north side,  
and about  $1\frac{1}{2}$  cables west-south-westward of it is a sunken rock with  
15 less than 6 feet water on it; the water all round the islet at the dis-  
tance of a quarter of a mile is deep, and at night it should be carefully  
avoided.

**LIGHT.**—A light is shown, at an elevation of 46 feet, from a white iron tower on the terrace of a small house, 16 feet high, situated on the western summit of Nata islet.

- 20 *Plan of Jura island on 1817.*

- JURA (GÝAROS) ISLAND** is situated 8 miles north-westward of Syra; it occupies a central position between Zea and Thermia on the south-west, and Andros and Tinos on the north-east, is roughly triangular in shape, and about  $4\frac{3}{4}$  miles in length, east  
25 and west, its eastern side being  $2\frac{3}{4}$  miles in length. Jura is moderately high, barren, possesses no harbour, and had a population of only 18 persons in 1896. Glaro, a narrow islet, two-thirds of a mile in length, is nearly joined to the south-eastern end, and another but smaller islet lies on the north side of the western point. A sunken rock also  
30 lies about a cable from the shore three-quarters of a mile westward of the north-eastern point, elsewhere the water is deep, and free from off-lying danger.

*Chart 1820, Andros island and Doro channel.*

- ANDROS ISLAND**, the northernmost and largest of the  
35 Cyclades, is 21 miles in length in a north-west and south-east direction, with an extreme breadth of about 9 miles. The island is mountainous throughout, the water-parting being chiefly on the south-western side, with spurs or ridges extending north-eastward. Mount Kovari, near the middle of the south-western side of the island, and  
40  $1\frac{1}{4}$  miles from the coast, attains an elevation of 3,204 feet, and the summits of the mountains are covered with snow for months in the year. The island produces a large quantity of silk, fruit, and wine, onions, and corn generally sufficient for its own inhabitants. The town

*General charts 1542, 1820, 1815, 2836a.*

*Chart 1820, Andros island and Doro channel. Var.  $3^{\circ} 10'$  W.*

of Kastro is on the eastern coast, but there are various other towns, or villages, containing altogether, in 1917, a population of about 22,000.

**West coast.**—The description of the north-western coast, from Cape Phassa to Gavriion bay, is given on pages 168-171. 5

In continuation of the west coast, to the south-eastward, Thiákion point,  $2\frac{3}{4}$  miles from Megalo islet, is a prominent tongue of land at the base of Mount Kovari; on the south-east side of the point is a bay about three-quarters of a mile deep, and  $1\frac{1}{4}$  miles from the point are the ruins of an ancient mole. The coast thence south-eastward to the Steno pass, a distance of 10 miles, is more or less cliffy, irregular, and backed by high mountainous land; the coast is steep-to and without off-lying dangers, but vessels under sail with north-easterly winds should be prepared for heavy squalls. 10

**Steno point** (*Lat.  $37^{\circ} 41'$  N., Long.  $24^{\circ} 58'$  E.*), the southern 15 extreme of Andros, is the termination of Mount Aranka, which, at about  $2\frac{3}{4}$  miles northward of the point, is 2,250 feet high. From the point, the eastern coast of the island trends north-north-eastward  $5\frac{1}{2}$  miles to Cape Agios Kosmas, the extremity of the spur extending north-eastward from Mount Aranka. The coast, being the base 20 of the ridge, is all along steep, with no off-lying danger; it forms, with the northern coast of Tinos, a wide opening, from the eastward, to Steno pass.

*Plan of Steno pass on chart 1820.*

**Steno pass**, between Andros and Tinos, is 6 cables wide, the 25 water deep, and the course through, in mid-channel,  $63^{\circ}$  or  $243^{\circ}$  true. The points on either side should not be approached too closely.

The Steno pass is preferable to the Doro channel for low-powered vessels bound to the north-eastward or eastward with fresh northerly winds. 30

**Current.**—The current runs south-westward through the pass.

**LIGHT.**—A light is shown, at an elevation of 100 feet, from a square masonry tower 30 feet high, with building attached, on the north-western Dysvaton islet, off the north-west point of Tinos island, on the south side of the pass.

*Chart 1820, Andros island and Doro channel.*

**Kordion (Kóρθion) bay**, on the northern side of Cape Agios Kosmas, formed between two spurs extending north-eastward from the



Dysvaton islet lighthouse.

*General charts 1815, 2836a.*



*Chart 1820, Andros island and Doro channel. Var. 3° 10' W.*

western mountain range, is  $1\frac{1}{2}$  miles wide between Cape Agios Kosmas and Vuni point north-west of it, narrowing to half a mile at its head, and  $1\frac{1}{2}$  miles deep. On the low shore at its head are the  
 5 storehouses of Kordion town, which together with several villages are situated on the rising land within, the population of the district in 1896 being 4,765. The bay has convenient anchorage depths in from 15 to 5 fathoms, sandy bottom, but it is entirely open to the eastward. The mountain ridge, over the north-western side of the bay, is  
 10 1,895 feet high.

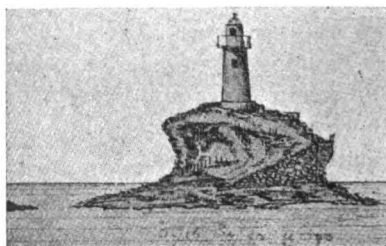
**Telegraph.**—Kordion town is a telegraph station.

**Port Kastro.**—The coast for 2 miles north-westward of Cape Akamatis, the north point of Kordion bay, forms several little indentations as far as Lidhi point, between which and Cape Puda, nearly a  
 15 mile to the north-westward, is a bay, divided into two portions by a point projecting north-eastward, from which a ledge of rocks, above water and sunken, extends a quarter of a mile, and near the outer end of this ledge is Turliti islet. The town of Kastro is built on the inner portion of this projecting point, and from it roads lead to the different  
 20 villages in the interior. The population of the town in 1896 was 1,817.

Port Kastro, the south-eastern and smaller portion of the bay, is about 4 cables deep and  $2\frac{1}{2}$  cables wide, with depths of 4 to 14 fathoms; it is open to the north-east and seldom used.

The north-western portion of the bay is similar, but larger than Port  
 25 Kastro, with 7 to 12 fathoms water in the middle, and is more generally used. A pier 200 yards long, extending southward from the north-west side of the bay, affords shelter to a few coasting vessels, and there is also a pier in the south-west part of the bay. In 1900 the French war vessel *Condor* found good anchorage in  $5\frac{1}{2}$  fathoms, a cable south-  
 30 ward of the outer end of the northern pier.

**LIGHTS.**—(Lat.  $37^{\circ}50' N.$ , Long.  $24^{\circ}57' E.$ ).—On Turliti islet, situated on the ledge between the two bays, and on  
 35 the north-west side of the entrance to Port Kastro, is erected a cylindrical tower 21 feet high, from which a light is shown, at an elevation  
 40 of 52 feet above the sea.



Turliti islet lighthouse.

A light is shown at an elevation of 33 feet from an iron standard on Kastro pier head, and an

*General chart 2836a.*

*Chart 1820, Andros island and Doro channel. Var. 3° 10' W.*  
occasional light from the pier on the south-west side of the north-western bay.

**Communication.**—Greek steamers call at Port Kastro as well as at Port Gavrion. 5

**Cape Gerias (Gria),** the north-east point of Andros, is 3½ miles northward of Port Kastro; off this part of the steep coast are three detached rocks above water, lying close to the shore at varying distances apart, with deep water close outside them.

**LIGHT.**—A light is shown, at an elevation of 240 feet, from a circular masonry tower with a dwelling attached, 33 feet high, erected on Cape Gerias (*Lat. 37° 54' N., Long. 24° 58' E.*). 10

**Coast.**—From Cape Gerias the clifty irregular coast, with numerous little coves, trends north-westward to Cape Kabanos, the northern extreme of Andros; in this portion of the coast there are no anchorages nor off-lying dangers, and the island is exposed to the full force of north and north-easterly gales, with the attendant current. From Cape Kabanos the steep coast turns abruptly to the west-south-west, and trends 5 miles in that direction to Cape Phassa. *See page 168.* 15

**Current.**—At 6 miles northward of the coasts of Andros and Tinos, in the month of August, 1916, the current was observed to set to the south-south-eastward at the rate of 1½ knots with light to moderate southerly winds, and 1½ knots with light airs from the northward. 20

Between northward of Andros and Nikaria, in November, 1916, a current set south-south-eastward three-tenths of a knot an hour, with a gentle breeze from N.N.W., the wind for the previous 24 hours having been fresh from the East. 25

*Chart 1815, The islands of Tinos, Mykonos, &c.*

**TINOS ISLAND,** separated from Andros by Steno pass, and one of the most productive of the Cyclades, retains its ancient name. It is about 15 miles in length, and nearly 6½ miles in breadth at the south-eastern end, decreasing to the north-west and terminating at Steno pass, where it is not a mile broad. The island is mountainous, and rugged hills extend throughout its length; Mount Kolembo, near the centre, is 2,090 feet high, but the greatest elevation is at the south-eastern end, where Mount Skhionia attains an elevation of 2,340 feet above the sea. 30 35

**Products.**—A large portion of the sides of the mountains and hills is covered with narrow terraces for vines and fig trees; the Tinos wine is good and of two sorts, of which the white, the most esteemed, has a rich fruity flavour somewhat resembling Tokay. A great quantity of silk, the production of the island, is manufactured into 40

*General charts 1820, 2836a, b.*

*Chart 1815, The islands of Tinos, Mykonos, &c. Var. 3° W.*

stockings, gloves, &c., strong, durable, and moderate in price. Corn grows plentifully, and there are also extensive quarries of marble, which is exported to Smyrna and other Turkish ports, after being  
5 worked into tombstones, slabs for baths and fountains, over 1,000,000 tons being quarried in 1907. The output, in 1914, of green marble blocks, by a company, was 370 cubic metres.

**Provisions** are plentiful, cheap, and good; grapes, figs, melons, and vegetables are exported in great quantities, and honey is obtain-  
10 able.

**Agios Nikolas or Tinos**, the only town of any importance, is situated on the south-west side of the island at the foot of the hill facing the sea, on which stood the ancient city, the walls of which are still traceable.

15 In addition to the town of Agios Nikolas, which in 1896 contained 2,415 inhabitants, there are about 50 villages, large and small, on the island, the total population in 1907 being 11,186. The Tinians are skilful, industrious, and hospitable, with a simplicity which is interesting; the women, amongst the most beautiful of the archi-  
20 pelago, possess a graceful carriage, and extremely pleasant manners. Within five minutes' walk of the town is the cathedral, the pride of the Tinians, which, built of white marble, forms with its courts, schools, &c., a picturesque group of buildings, having an imposing appearance from the sea.

25 There are also a large number of both Greek and Roman Catholic chapels throughout the island; the communicants of the latter amount to more than half the whole population of the island.

**Oxoburgo**, the former capital, situated in the interior, is now nearly deserted; in 1715, when it was the principal town, it was  
30 destroyed by the Turks, and surrendered by capitulation, when the fortifications were partly destroyed. The remains of the fortress occupying the steep hill to the westward of the town, show it to have been a place of considerable strength, and though suffered to fall to decay it might easily be repaired.

35 **Ports of Tinos.**—There are no good ports in the island; the pier at Stauro bay, on the south-western coast, affords protection to a few small vessels, but it is too limited to be of use as a port of general resort. The holding ground outside the pier is uncertain, and the squalls so heavy at times as to cause a vessel to drag with two  
40 anchors down.

*Plan of Tinos harbour on chart 1815.*

**Tinos harbour** (*Lat. 37° 32' N., Long. 25° 10' E.*), at the town of Agios Nikolas, close northward of Cape Akroteri, near the south-west point of the island, is formed by two breakwaters, which afford

*General charts 1815, 2836a.*

*Plan of Tinos harbour on chart 1815. Var. 3° W.*

protection for small vessels from all winds, excepting westerly ones. It is  $2\frac{1}{2}$  cables in length, north and south, and  $1\frac{3}{4}$  cables wide; a bank, with depths gradually increasing to 3 fathoms, extends from a quarter to three-quarters of a cable from the shore round the harbour, and the depths beyond increase outwards to  $6\frac{1}{2}$  fathoms in the middle of the entrance, which is about a cable wide, the anchorage space of over 3 fathoms being only about a cable in diameter. The north breakwater extends about 150 yards southward, and the south breakwater, or new mole, 325 yards north-westward. The shoal bank above mentioned extends all along the north breakwater, but near the new mole the depths are from 3 to 8 fathoms.

The anchorage off the harbour is not recommended, especially for sailing-vessels, as there is difficulty in getting under way with the wind from the north-west, when it is extremely variable.

**Lights** (*Lat. 37° 32' N., Long. 25° 10' E.*).—A light is shown from an iron gallows at the end of the north breakwater; and another, at an elevation of 33 feet, from a wooden house at the end of the new mole.

*Chart 1815, The islands of Tinos, Mykoni, &c.*

**Anchorage.**—There is anchorage in Nikolo bay south-eastward of Tinos harbour, between Cape Akroteri and Urio point, the south extreme of Tinos island, in from 10 to 14 fathoms, clay bottom. A good berth is about half a mile from the cape, with the spire of Agios Nikolas cathedral bearing about 331° true, and Cape Akroteri 293° true. A small shoal lies close off the cape, but it can be seen, and is not in the way of vessels coming to an anchor.

The anchorage in Nikolo bay is convenient for vessels bound to the northward through Mykoni channel; and also as a temporary stopping place for vessels bound to Syra during a northerly gale. In anchoring be prepared for heavy squalls, and veer a good scope of cable.

**Akako rock**, with 6 fathoms of water on it, lies off Nikolo bay, bearing from Cape Akroteri 149° true, distant half a mile; elsewhere the bay is clear.

**Cape Joannis.**—There is also shelter with north-easterly and north-westerly winds under Cape Joannis, the south-east extreme of Tinos island, but it is difficult to reach in a sailing-vessel, on account of the heavy squalls which rush down the side of the mountain. The Blabi rocks, awash or just above water, a mile south-westward of the cape, are a quarter of a mile from the shore, and steep-to.

**Livada point**, the north-east point of Tinos island, is  $4\frac{1}{2}$  miles to the northward of Cape Joannis.

*General charts 1815, 2836a.*

*Chart 1815, The islands of Tinos, Mykoni, &c. Var. 3° W.*

**LIGHT.**—A light is shown, at an elevation of 135 feet, from a rectangular masonry tower above the lightkeeper's dwelling, situated on the extremity of Livada point.

5 **Port Panormos**, on the northern side of the island, which must not be mistaken for the port with the same name on the adjacent island of Mykoni, possesses a secure anchorage for small vessels in the western part of the bay, where there are some storehouses, and sheltered from northerly winds by Planumi (Planudi) islet. The northerly  
10 winds, which prevail most of the summer months, blow directly into all the other bays on this side of the island. The port is frequented by small vessels for tombstones and marble slabs, the product of the extensive quarries in the immediate neighbourhood. The marble is of three kinds, dark grey with black veins, white, and green.

15 **Beacon.**—A stone column, in the form of a truncated cone, on a circular base, marks a shoal near the north-western shore of Port Panormos.

**Communication.**—Near Port Panormos is a telegraph station.

**LIGHT** (*Lat. 37° 39' N., Long. 25° 05' E.*).—A light is shown  
20 from a square tower on a dwelling house, 26 feet high, on the summit of Planumi islet, at an elevation of 279 feet above the level of the sea.

**Mykoni channel.**—When it blows hard from the northward, and the current, then strong through the Doro channel, renders it  
25 impossible for a sailing vessel to work through, the Mykoni channel, between Tinos and Mykoni islands, is preferred, as the current is not so strong as in the Doro. Fast sailing vessels having failed to pass the Doro, have succeeded in getting through the Mykoni channel without difficulty. The Mykoni channel is  $4\frac{1}{2}$  miles wide, and clear  
30 of danger, but the squalls from the high land must be guarded against. In approaching the coast of Asia Minor, the water will become smoother, and a vessel will be able to work up under the lee of Khios.

**RHENEAE.**—The island of Rheneae, 10 miles eastward of Gaidaro  
35 island of Syra, is about  $4\frac{1}{2}$  miles in length, north and south, 2 miles in maximum breadth, and most irregular in shape, being almost divided into two islands by a narrow isthmus; the northern and larger part is the higher, being 490 feet above the sea. On the eastern side of the southern portion of Rheneae, opposite the larger  
40 Rematia islet, the ground in 1843 was strewn with fragments of sarcophagi and votive altars, but the tombs had been opened and none were entire. The absence of sepulchral monuments on Delos, and the quantities of sarcophagi on Rheneae, is accounted for by an ancient

*General charts 1820, 2836a.*

*Chart 1815, The islands of Tinos, Mykoni, &c. Var. 3° W.*

edict, forbidding either births, deaths, or burials to take place on the sacred islet of Delos, where no sacrifice which required the blood of an animal was permitted.

Rhenea has no port, except a little bay on the north coast of the southern portion of the island, and eastward of the isthmus above mentioned, fit for small craft with local knowledge. It is situated about three-quarters of a mile southward of the lazaretto. A rock nearly awash lies about  $1\frac{1}{2}$  cables northward from the extremity of a low point projecting into the bay in the form of a spur from the south shore, and 6 cables eastward from the narrowest part of the isthmus, and the passage in is on either side of the rock; the port is safe, but the small craft that enter it must moor.

**Quarantine.**—Vessels arriving at Grecian ports infected with the plague, or other infectious diseases, are sent to Rhenea to lie in quarantine and purify, for which purpose the lazaretto and store-houses were erected.

**The Lazaretto** (*Lat. 37° 25' N., Long. 25° 15' E.*) is situated upon a peninsula on the south-east side of the northern portion of Rhenea, about half a mile from the narrowest part of the isthmus. The sanitary office is erected on the middle of the narrow neck of sand connecting the quarantine establishment with Rhenea. Close to it, and on the south side of the neck, is a small landing pier.

A submerged breakwater has been built in front of the pier to shelter it; its centre and extremities being marked by stone pillars. Boats coming to the pier from the anchorage after passing the rocks lying off the south end of the lazaretto, should steer in with the western pillar in line with a conspicuous yellow house; round the pillar close-to, and steer for the pier. This will keep a boat outside the rock in the centre of the bay, and which cannot always be distinguished.

Vessels, including men-of-war, which arrive at Rhenea to undergo quarantine, are required to report themselves as soon as possible to the medical authority, who is also Captain of the Port, when they will be entered, quarantine commencing from that time. A Greek gunboat is usually stationed here to enforce the regulations.

**Anchorage.**—A fairly well protected berth for a large vessel is in from 13 to 14 fathoms, with the belfry of a small Greek church in line with the north part of a conspicuous white building, bearing 269° true, taking care to avoid the rock on the south side of the bay before mentioned. These leading marks are easily distinguished, as they are the two most southern white buildings, and situated just northward of the narrow isthmus connecting the north and south portions of Rhenea island.

*Chart 1815, The islands of Tinos, Mykonos, &c. Var. 3° W.*

**Supplies.**—Fresh provisions may be procured through the Sanitary officer, who orders them across from Syra. A charge of 15s. is made for the boat hire.

- 5 **Telegraph.**—Rhenea is in communication with Syra and the rest of the world by telegraph, but telegrams can only be sent four times a day, viz., 10h. a.m., noon, 4h. and 7h. p.m. The telegraph office is at a place called St. George.

- Communication.**—Steamers do not call at Rhenea, but communication is maintained with Mykonos island by sailing boat.

**Miso bay,** on the south-western side of the isthmus, affords anchorage during northerly winds in from 8 to 15 fathoms, sand.

- Dangers.**—In coasting these islands, the salient points should not be rounded too closely. Most of the dangers can be seen, and are steep-to, the principal being some sunken rocks a quarter of a mile off the west coast of the northern portion of Rhenea, about three-quarters of a mile southward of Kaloyero point, its north-western extreme; also off the second point north of Miso bay. Rocks also skirt the inner part of Miso bay, and lie off the north-east extreme of the southern part of the island. Rocks also extend from Kako point, the north extreme, and Granite point, off the south extreme of Delos, for which the chart will be a sufficient guide.

- DELOS** (*Lat. 37° 24' N., Long. 25° 17' E.*), about 3½ cables eastward of the southern part of Rhenea, is 2½ miles in length, north and south, and may average about half a mile in breadth; Mount Cynthus, its greatest elevation, about a mile from the northern end, is 350 feet high, and has a beacon on its summit. At the south end of the island is a low irregularly-shaped islet nearly touching it, the south point of which, called Granite point, is surrounded by rocks.

- 30 In 1896 the population of Delos consisted of 67 persons.

- Delos, in ancient mythology, was considered to be the birthplace of Apollo and Artemis (Diana), and it was held so sacred that the islands surrounding it derived from the ancients the name of Cyclades. Captain Brock, R.N., who assisted in the survey of these islands, in 1843, writes:—

- “The description of the wealth and magnificence of the buildings which formerly adorned this island is in strange contrast to the complete air of desolation which now reigns over it, but which is not the work of time so much as the hands of men. The sites of the temples which formerly embellished the sea-shore, are now only traceable by fragments of broken columns and pieces of marble, which are daily being carried away for building purposes.

“Its lakes, fountains, and springs are dried up, and the only remains in any preservation, or objects of interest, are the theatre and an oval

*General chart 2836a.*

*Chart 1815, The islands of Tinos, Mykoní, &c. Var. 3° W.*

basin. The theatre was a splendid building, and still possesses an air of grandeur strangely at variance with the solitude and desolation around it. On the north-west side of Mount Cynthus, and about half-way up, is a remarkable passage or cave, formed by huge stones reclining and meeting each other at the top, so as to form a sort of arch which led to some subterranean chamber, probably the treasury of Delos; it now serves to shelter goats from the sun.

“Other remains, such as ancient walls, heaps of shapeless masses of marble, with broken and prostrate columns, are still extant; of the latter, those immediately facing the sea lie as if overthrown by an earthquake, side by side as they formerly stood. A trunk of a colossal marble statue (presumably Apollo), 6 feet across the shoulders, broken in two, without head, arms, or legs, still lies on the ground. The view looking down from the mouth of the cave towards Syra, and over the broken and tortuous shores of Rhenea, is most beautiful. The island is overgrown with brushwood, on which goats feed; rabbits are very numerous, and the sides of the hills thickly dotted with their holes. An attempt has been made to cultivate a small portion of the soil, but there are only a few inhabitants, and the Mykonites are the proprietors.”

Abreast the islet of Little Rematia (*Lat. 37°24' N., Long. 25°16' E.*) is a museum with conspicuous red roof.

*Plan of Dili strait on 1815.*

**Dili strait.**—Delos is separated from Rhenea by a narrow strait named Dili, having two islets, the larger islet, Rematia (ancient *Hecate*), with Little Rematia,  $1\frac{1}{2}$  cables north of it, lying in the middle of the northern part; both islets are barren and uncultivated. Opposite the south end of the northern islet, on the shore of Delos, the remains of a circular mole are to be traced, now filled up with sand.

The passage between the Rematia islets and Delos is narrow, and not available for navigation, as owing to the deposit of material, from excavations carried out in the vicinity, a barrier is gradually being formed across the channel.

The larger and western passage, or that between the Rematia islets and Rhenea, carries between 4 and 5 fathoms water through it, and is often used by merchant vessels; with northerly winds a strong current sets to the southward.

**Anchorage.**—The best anchorage in Dili strait is in the northern part, known as Delos harbour, in from 9 to 12 fathoms water, good holding ground, consisting of dark sand, mud, and weed. About a quarter of a mile southward of Rematia island, and rather nearer to Rhenea than to Delos island, H.M.S. *Barham*, in 1893, rode out a heavy northerly gale, the west extreme of Rematia island bearing 355°

*General charts 1815, 2836a.*



*Plan of Dili strait on 1815. Var. 3° W.*

true, and Mount Cynthus (*Lat. 37° 24' N., Long. 25° 17' E.*), Delos island, 57° true. In deeper water, towards the centre, the holding ground is not so good. There is no danger in entering the strait from the southward, which is half a mile wide.

**Shoal.**—A  $3\frac{1}{2}$  fathoms patch lies  $1\frac{1}{2}$  cables north-north-eastward from Dili point, the eastern point of the south entrance to Dili strait, and one cable from the shore eastward.

*Chart 1815, Tinos, Mykoni islands, &c.*

**10 MYKONI (MYKONOS) ISLAND** is of an irregular form, the length of its greater axis in a west-south-west and east-north-east direction being  $8\frac{1}{2}$  miles between Alogo and Euro points, while in a north and south direction, westward of Port Panormos, it is nearly 6 miles across. Its greatest elevations are at the north-west and eastern ends, where the heights are respectively 1,195 feet and 1,150 feet above the sea. The island is for the most part rocky, and huge blocks of granite are wildly strewn over the hills, the only cultivated ground being in the vicinity of the town of Kamenaki, on the west side of the island, where there are some few cornfields and vineyards; elsewhere the ground only affords pasture for a few flocks. Nevertheless, the town is prosperous, and with the aid of whitewash it looks well from seaward, but the streets are dirty. There are about 30 vessels and many boats belonging to the island, and a large number of the population lead a seafaring life. In 1917 the total number of inhabitants amounted to about 7,000; the town of Kamenaki and suburbs had about 3,000, and a large village, named Ano Mera, in the hills on the south-east part of the island, had about 2,500 inhabitants. Numerous small churches and chapels are scattered throughout the island of Mykoni.

**30** Lead mines exist in the island, but exportation has stopped at present.

The name Mykonos is pronounced Mikkonos.

**LIGHT** (*Lat. 37° 29' N., Long. 25° 19' E.*).

**35** A light is shown, at an elevation of 604 feet, from an octagonal tower on dwelling, 44 feet high, erected on Cape Armenisti, the north-west extreme of Mykoni island. Gaps in the land permit the light to be occasionally seen from the southward.

**40 Turla bay.**—The anchorage in Turla bay, on the west side of Mykoni island, is just north of the town of Kamenaki (Mykonos), in 13 fathoms water, good holding ground; but vessels bound

*General charts 1815; 2836a.*



C. Armenisti lighthouse.

*Chart 1815, The islands of Tinos, Mykoni, &c. Var. 3° W.*

through the Mykoni channel, and having to take shelter here in strong "meltems" or north-easterly winds, generally anchor in the northern part of the bay, in 9 or 10 fathoms, sandy bottom, with patches of weeds. In rounding the north-western end of Mykoni two small chapels will be seen, one on the point immediately south-east of Cape Turla, the north point of the bay, the other close to the shore farther on; near these is the anchorage last mentioned. 5

**The Korpho**, in the southern part of Turla bay, is, however, considered the safest anchorage; this inlet is a mile deep, and though open to the north-westward, vessels lie here during summer, and at times lay up for the winter. Off the western point of the entrance is the little islet of Agios Georgio, with a church on it, and to the north-west of Agios Georgio is another but smaller rocky islet, with a depth of 5 fathoms between them. Extending one-third of a mile south-south-westward from the latter islet, and at about the same distance westward from Agios Georgio, are two rocky shoals with one fathom water on them, difficult to distinguish. 10 15

In anchoring in the Korpho avoid the rocky shoals just mentioned, and with the inlet open steer for the centre of the low neck of sand at its head until in 13 or 12 fathoms, sand, and then anchor; small vessels can proceed nearer the head of the harbour, anchoring in 3 to 5 fathoms, the water gradually shoaling to the perfectly flat shore; if intending to remain a short time, steady the vessel by hawsers to the shore. Large vessels should anchor farther out or north of the town; the holding ground is good, but the water rather deep. 20 25

**LIGHT.**—A light is shown, at an elevation of 23 feet, from a mast 16 feet high on the end of Kamenaki breakwater, which is 360 feet long.

**Water.**—On the western side of the Korpho is a small run of fresh water. 30

**Communication.**—Greek steamers call at Kamenaki from Syra and adjacent islands.

**Trade.**—Barley, beans, potatoes, onions, and lambs are exported.

**Telegraph.**—The town of Kamenaki is a telegraph station. 35

**Praso islets** (*Lat. 37° 23' N., Long. 25° 19' E.*).—The passage between Mykoni and Delos is obstructed by the little rocky islets of Praso.

A rock with one fathom of water over it lies 3 cables east-south-eastward from the south-west Praso islet, and 197° true about 4 cables from the eastern extremity of the eastern islet. 40

When bound to or from Turla bay care should be taken to avoid

*General chart 2836a.*

*Chart 1815, The islands of Tinos, Mykoni, &c. Var. 3° W.*

this danger, the rocks off Kako point, the north extreme of Delos island, and the one-fathom shoals off Agios Georgio islet.

With these exceptions the channel between Delos and Mykoni  
5 islands is deep and clear.

**Current.**—During northerly winds the current runs strong to the southward, between Praso islets and Delos.

**Port Ornos.**—Port Ornos, on the south side of Mykoni, is nearly similar in shape to the Korpho on the north, separated from it by  
10 the low neck of sand before mentioned, and open to the southward; the holding ground is good, but it is only fit for small vessels. Alogo point (the south-western extreme of Mykoni), and the point on the eastern side of the port, are both rocky and foul, and should be avoided.

15 **Agi' Anna bay** is about 4 miles eastward of Port Ornos; the coast between is irregular, forming two or three open bays. With northerly and westerly winds there is anchorage in Agi' Anna bay, a short mile north-north-eastward of Makrokephalo. Fronting the entrance of the bay is a small, low, rocky islet, which may be  
20 passed at a short distance on either side, and the anchor let go in 10 or 9 fathoms, sand; farther out the bottom is rocky.

**Euro point** (*Lat. 37° 29' N., Long. 25° 28' E.*).—Two large rocks above water lie about 2 cables north-eastward of Euro point, the north-eastern extreme of Mykoni.

25 **Port Panormos.**—The north coast of Mykoni is rugged and irregular, and a bight called Port Panormos, a little more than half a mile wide at the entrance, extends southward upwards of 2 miles, the depth decreasing from 30 fathoms in the entrance to 5 fathoms near its head. An islet and several large rocks above water lie on  
30 the western side of entrance; the bight is completely open to the northward, there is no village, and it is seldom visited. It must not be mistaken for the port of the same name in the north part of Tinos island.

**Dragonisos.**—Off the eastern side of Mykoni is Dragonisos,  
35 about  $1\frac{1}{4}$  miles in length, north and south, and 585 feet high. Skirting the west coast of the islet, here and there, are rocks above and below water, and which also extend a quarter of a mile off the northern end. There is a fine cavern on the west side of the islet. The passage between Dragonisos and Mykoni is three-quarters  
40 of a mile wide, and, in mid-channel, deep and clear.

**Stapodia islet** is 4 miles south-eastward of Dragonisos, and its southern end is  $7\frac{1}{2}$  miles 92° true from Makrokephalo of Mykoni.

*General chart 2836a.*

*Chart 1815, The islands of Tinos, Mykoní, &c. Var. 3° 10' W.*

It is a narrow irregular islet about 8 cables in length, with shoal ground and rocks above water, extending nearly half a mile north-north-eastward from its northern extremity. A rock, above water with a sunken danger close to it, lies off its western point. Most of the dangers can be seen, but there is no need to be close to the islet. 5

*Chart 1837, Paros and Naxos.*

**MERMINGA ROCK.**—This isolated rock (*Lat. 37° 11' 40" N., Long. 25° 4' E.*), and about 50 feet high at its north-west end, lies 287° true, distant  $8\frac{1}{4}$  miles from Cape Korax, the northern extreme of Paros island, and  $6\frac{1}{2}$  miles from the nearest coast of that island. As the rock rises from, and is surrounded by, deep water, and is also a long distance from land, especial caution is necessary when in its vicinity, so as to avoid it at night or in thick weather. (See view of Paros island from the rock, on chart 1837.) 10 15

**Strongylo (Strongyli) island.**—About 9 miles eastward of Napo point in Siphano island (*see* page 178) is the bold rugged island of Strongylo, 615 feet high, and about  $1\frac{1}{4}$  miles in length, the westernmost island of the Paros group. 20

**Despotiko island** (*Lat. 36° 57' N., Long. 25° 00' E.*), lying eastward of Strongylo, is separated from that island by a channel,  $4\frac{1}{4}$  cables wide, with 14 fathoms water in the middle. Despotiko is nearly 3 miles in length, east and west, about a mile in average breadth, and its highest point, Mount Kudro, rises 640 feet above the sea, over the bold cliffy head of that name on the south; both these islands are barren, without inhabitants, and their coasts steep-to. 25

**Kalika rocks** are two patches, with  $2\frac{1}{2}$  fathoms water on each, lying about 350° true,  $7\frac{1}{2}$  cables, and one mile respectively, from the northern end of Strongylo, and  $1\frac{1}{10}$  miles westward of Kalika point, the northern extreme of Despotiko island; between the patches there are from 5 to 13 fathoms water. The boat passage between Despotiko and the islet north-eastward of it, kept open of Kalika point, 99° true, leads northward of the rocks; the west side of Strongylo bearing eastward of 175° true, will lead westward of Kalika rocks. 30 35

**Port Despotiko (Episkopi).**—This snug little anchorage, situated between the north-east side of Despotiko and the south-western side of Antíparos, is sheltered from all but southerly winds. The north-western end is protected by an islet with a narrow boat passage on each side; the port is about a mile in length, 4 cables wide at the entrance, and from 10 to 2 fathoms deep. The only interest here is the celebrated grotto; to reach which, land on the 40

*General chart 2836a.*

*Chart 1837, Paros and Naxos. Var. 3° 10' W.*

northern shore of the port, about 500 yards to the south-east of the few scattered houses seen on the shore, cross the hill in a north-easterly direction, and after reaching the summit the entrance of the grotto will be observed, showing as a large and distinct dark blotch on the side of a distant hill to the north-east, about three-fourths from the top. The grotto is reached after  $2\frac{1}{2}$  hours' easy walking and climbing.

**ANTÍPAROS** is nearly 7 miles in length north and south, with an extreme breadth of 3 miles, and its most elevated part, said to be a solid block of marble, is 1,010 feet above the sea; it produces a little corn and wine, and with fishing the inhabitants, who in 1896 numbered 596 and lived chiefly in the village of Kastro (*Lat. 37° 02' N., Long. 25° 05' E.*), manage to support themselves. The village stands on a ridge about two-thirds of a mile from the north end of Antíparos, and from it the time to the grotto on a donkey is an hour and a half.

A small quantity (250 tons) of zinc ore (calcined calamine), was shipped from this island in 1898.

**ANTÍPAROS STRAIT** is formed between the islands of Antíparos and Paros. The entrance on the south between the southern extremities of Paros and Antíparos is  $5\frac{1}{2}$  miles wide, but contracted by a chain of islets, rocks, and shoals, which lie mainly off the coast of Paros; the outer and largest of these islets is named Pandros, and the inner,  $1\frac{1}{2}$  miles to the north-north-west, is called Turna. The passage east of these islets has depths of from 6 to 20 fathoms, and westward 8 to 30 fathoms.

**Petalitha rock** is an islet situated 2 cables from the eastern side of Antíparos island, and 9 cables to the northward of Cape Petalitha, the south extreme of that island. The sunken rock, lying about one cable north-east of this islet, is at times a foot above water; when this is the case there will be less water in the strait to the northward than marked on the chart.

**Anchorage.**—There is temporary anchorage during fine weather in summer for visiting the grotto of Antíparos, a little northward of Akako point, in from 9 to 12 fathoms. Landing will be found in the little sandy bay westward of the point, from which the grotto is distant about three-quarters of a mile. A rugged path will be seen or a guide found.

**Anavadi rock.**—At  $5\frac{1}{2}$  cables  $330^\circ$  true from Turna islet, and rather more than that distance eastward of Glipho point (Antíparos), is Anavadi rock, with less than 6 feet water on it, and 5 fathoms around. Anavadi rock will be avoided by keeping about a quarter of a mile from Glipho point.

*General chart 2836a.*





*Oro I. Turla I.*

View of the Fourteen-feet pass in Antiparos strait from the south, showing East point of Oro I.  
in one with western cliff on Turla rock, bearing  $359^{\circ}$  true.

*Plan of the Fourteen-feet pass of Kastro on 1837. Var. 3° W.*

**Fourteen-feet pass** (*Lat. 37° 02' N., Long. 25° 06' E.*).—The northern end of Antíparos strait, between Paros and Antíparos, is only about  $4\frac{1}{2}$  cables across, and encumbered with islets, rocks, and shoals, leaving a very narrow channel carrying 14 feet water on the Antíparos side of Budaria islet, called the Fourteen-feet pass of Kastro. *See Petalitha rock, page 202.* 5

The eastern point of the little islet of Oro, in line with the western cliff of Turlo rock (which is remarkable, being somewhat like a square tower), and bearing about 359° true, leads through the pass, but it is so very contracted and dangerous that it is unadvisable to take it unless under favourable circumstances and in cases of necessity, when the chart and eye must be the guide. *See view A on chart 1837 and opposite.* 10

*Chart 1837, Paros and Naxos.* 15

**Islets and shoals.**—From the north end of Antíparos island another chain of islets, rocks, and shoals extends 3 miles north-north-eastward, which terminate in the Portis, two small islets or rocks steep-to, and  $1\frac{1}{3}$  miles from the shore of Phikas point, on northern side of entrance to Port Parœkia, in Paros. *See page 204.* 20

**The Buves.**—Between the Portis and Spiridioni rocks,  $1\frac{1}{10}$  miles to the southward, are the Buves, three of which are above water, with sunken rocks around them, one of the latter being  $2\frac{1}{4}$  cables west-south-westward of the southern dry rock. The passage between Spiridioni rocks and Turlo rock on the south is half a mile wide, with 15 fathoms in mid-channel. The Skala, half a mile east-south-eastward of Spiridioni rocks, and 3 cables from the shore of Paros, is surrounded by shoal water, and should be given a berth. 25

**Temporary anchorage.**—There is temporary anchorage for small vessels during summer, in 5 or 6 fathoms water, sheltered from all but north-easterly winds, in the bight formed by Kabura and Diplo islets, and north of Oro. The two former are the largest of the islets extending northward from Antíparos, and nearest to that island. 30

**Directions.**—The above islets and rocks cover the approach from the westward to Port Parœkia and the Fourteen-feet pass of Kastro; the passages between Turlo rock and the Portis are deep, and when taken the chart and the eye must be the guide, but bound from the westward for Port Parœkia the safest way is to pass northward of all. 35

**PAROS.**—This island, about 12 miles in length in a north-east and south-west direction, is rather more than 7 miles in breadth, and appears like a round mountain with two summits about three-quarters of a mile apart, of which Mount Agios Elias, the north-western, is 2,530 feet, and Mount Koromboli, the south-eastern, 2,450 feet high. 40

*General chart 2836a.*



*Chart 1837, Paros and Naxos. Var. 3° W.*

The land from these elevations slopes evenly down to the cultivated plains below, which are mainly at the north-east and south-west ends of the island. The soil is fertile, but imperfectly cultivated, though in  
 5 good seasons a large quantity of wine, barley, and wheat are produced; but there are no olives, and very few other trees on the island. Sheep, goats, oxen, and asses are numerous. Parœkia, the capital, on the north-west side, and Marmora, on the south-east, are subject to inter-  
 mittent fevers. The population of the island in 1907 amounted to  
 10 8,491.

Paros is celebrated for its white marble quarries, which supplied material for the finest specimens of ancient Greek sculpture. These quarries are underground at the rear of Parœkia, and the marks of the instruments which the ancients used are still visible everywhere.

15 **PORT PARÆKIA (PARIKIAS)** (*Lat. 37° 05' N., Long. 25° 09' E.*), in the middle of the north-west coast of Paros island, is  $1\frac{2}{10}$  miles deep east and west, and about half a mile wide at the entrance, but only about half that width between the 5-fathoms line on either side. The port is open to the westward, and fronted by  
 20 a chain of islets and rocks extending from the north end of Antíparos island. See page 203.

**Shoals.**—On the southern side of entrance are Peponi rocks, above water, and farther in, Superbe rock, below water. In the central part of the port is a small rocky shoal with less than 6 feet water on it,  
 25 known as Parœkia shoal, and marked by a light column.

**LIGHTS.**—A light is exhibited, at an elevation of 44 feet, from a mast in the centre of a house, 27 feet high, situated on Phikas point, the northern entrance point of Port Parœkia.

A light is shown, at an elevation of 24 feet, from an obelisk with a  
 30 balcony on a column, 13 feet high, painted white with a red band, erected on Parœkia shoal.

**Directions.**—Agios Georgio church in line with Krio point, on the north side of the port, bearing 70° true, leads southward of the shoal ground extending from Phikas point, and northward of Parœkia  
 35 shoal in the central part of the port, just mentioned (*see* view B on chart 1837). In the middle of the port there are from 6 to 14 fathoms water, sand and mud, but it is not adapted for large vessels. The best berth is northward of the town.



View of Port Parœkia from the West.

*General chart 2836a.*

*Chart 1837, Paros and Naxos. Var. 3° W.*

**Parœkia town**, though not large, nor presenting any appearance of opulence, has a pleasant aspect; it consists of neat small houses, with terraced roofs surrounded by gardens and vines on trellises, and in 1896 contained 2,691 inhabitants. The Church of "Our Lady of the Hundred Gates" is a fine building, said to have been founded by the Empress Helena. Upon a rocky height on the sea side, in the centre of the town, are the ruins of a castle, constructed chiefly of marble from some ancient buildings on the same spot. To the north of the castle is the ruined church of "Our Lady of the Cross," which contains the only perfect specimen of Hellenic architecture in Paros, a semi-circular apse of white marble. Fragmentary remains are in abundance.

There are two small piers on the town side of the port.

**Communication.**—Greek steamers call here from Syra and the adjacent islands, and there is telegraphic communication with Syra and the rest of the world.

*Plan of Port Naussa on 1832.*

**Cape Korax (Korakas)**, the northern extreme of Paros and the western entrance point of Port Naussa, lies about 6 miles north-eastward from Phikas point, at the entrance to Port Parœkia. The cape is also the northern extreme of a very irregularly-shaped peninsula called Diakopto, joined to Paros by a narrow isthmus.

**LIGHT.**—A light is shown, at an elevation of 193 feet, from a square tower on dwelling, 32 feet high, situated on Cape Korax.

**PORT NAUSSA**, at the north end of Paros, is one of the best ports in the Cyclades, and large enough to contain a large number of ships. Its entrance is one mile wide between bold shores, clear of danger, and open to the northward. Immediately within, the port opens out more than 2 miles east and west, forming a bay on either side, and extends  $1\frac{1}{2}$  miles south-west to a low shore at its head; the shore is bordered all round by shallow water, and encumbered by islets both on the western and eastern sides.

The town of Naussa (*Lat. 37° 07' N., Long. 25° 15' E.*), on the south side of the port containing, in 1896, a population of 1,325, is at times unhealthy.

**Shoals.**—A shoal of  $2\frac{1}{2}$  fathoms lies  $1\frac{1}{4}$  cables west-south-westward

*General charts 1837, 2836a.*



Cape Korax lighthouse.

*Plan of Port Naussa on 1832. Var. 3° W.*

of the south end of Hebreo island, on the eastern side of the entrance to Port Naussa, and a rocky shoal with less than 6 feet on it lies about 60 yards off Tripetro point, on the east side of entrance.

- 5     **Anchorage.**—There is ample room and well-sheltered anchorage in from 6 to 9 fathoms water, mud, or sand and weeds, in the north-western part of the port, called Yanni bay. In entering Yanni bay in a large ship, the north point should be given a berth of a cable. Merchant vessels generally anchor south-west of Agios Artemios and
- 10    Agios Kali islets on the western side of the port, in 4 or 5 fathoms. A rocky shoal with less than 6 feet water on it extends  $1\frac{3}{4}$  cables east-south-eastward from the south end of Agios Artemios, the northern islet. There is also well-sheltered anchorage in 7 fathoms, in the eastern part of the port called Langeri bay; but in taking this
- 15    anchorage, a vessel should pass southward of the 3-foot shoal lying  $1\frac{1}{2}$  cables south-south-westward of Kamina point, passing between this shoal and the northern end of Mavro islet.

**Water** may be obtained at Naussa, but not with a northerly wind.

- Coast.**—The north-eastern end of Paros is surrounded by several
- 20    islets, rocks, and shoals; with the exception of Hebreo island, from the north-eastern extreme of which foul ground extends for half a cable, the islets are steep to on their seaward sides, there is nothing to take a vessel between them and the coast, and if bound into Port Naussa (*Lat. 37° 08' N., Long. 25° 15' E.*), they should be given a fair
- 25    berth.

*Chart 1837, Paros and Naxos.*

The east coast of the island is indented by several bays affording little or no shelter, but with no off-lying dangers other than those to be particularly described in connection with Naxos. See page 209.

- 30    **LIGHT.—Krazi (Kratzi) point.**—A light is shown at an elevation of 76 feet, from a white iron beacon tower on concrete base, erected near the extremity of Krazi point, midway down the east coast of Paros, and opposite the Amaridi rocks. See page 209.

*Plan of Port Trio on 1832.*

- 35    **PORT TRIO**, on the south-eastern side of Paros, is formed between two slightly projecting points of the coast called Capes Khiuni and Pyrgo; the island of Trio on the south-east, and the islets of Makro and Praso which partly protect it on the east. The island of Trio, which is triangularly shaped, its sides being about half a mile
- 40    in length, is  $6\frac{1}{2}$  cables from the shore, and the space between affords good summer anchorage, but being exposed to south-west and southerly winds, which cause a considerable swell, it is therefore unsafe in winter. Vessels may anchor where convenient, but the best

*General charts 1837, 2836a.*

*Plan of Port Trio on 1832. Var. 3° W.*

berth is rather nearer the island of Trio than Paros, in 7 or 8 fathoms water, sand and weeds. *See view on plan and below.*



[ Cape Pyrgo.

Port Trio.

Trio I. 9° true 1 1/4 miles.

Praso. Makro.

View of Port Trio from the southward.

**Makro** (*Lat. 37° 00' N., Long. 25° 17' E.*).—The islet of Makro lies north and south 3 cables in length, with some small islets or rocks at the north end, from which shoal ground extends a long cable northward, leaving 7 or 8 fathoms water in the narrow space between it and Praso islet, farther north. Shallow rocky ground extends 1 1/4 cables southward from Makro islet. 5

**Directions.**—With a leading wind and under favourable circumstances, a vessel may pass out between Praso and the coast, by keeping about a cable from the islet, into the channel between Paros and Naxos. In going out between Trio and Makro islets, the bank extending a cable north of the former, and the rocky ground extending southward of the latter, must be avoided. 10 15

**Water.**—The watering place at Trio point, midway between Capes Khiuni and Pyrgo, will be known by the houses, and a ship may obtain a plentiful supply. Near the place where the boats should anchor are several rocks, which circumstance renders watering difficult with south-west and southerly winds, when a sea sets in. With a canvas hose, 60 yards in length, 90 tons of water may be obtained in 12 hours with sufficient boats and under favourable circumstances. 20

*Chart 1837, Paros and Naxos.*

**NAXOS** (ancient *Naxia*), one of the large islands of the Cyclades, is 18 miles in length north and south, with an extreme breadth of 12 miles, and mountainous throughout its length; the highest summit, Mount Zia, is 3,290 feet, and Mount Korono, about one-fourth from the northern end, is 3,250 feet above the sea. Besides the capital, the island contains 38 villages; the entire population, in 1907, amounted to about 16,694, nearly all Greeks. 25 30

**Productions.**—Naxos contains granite, serpentine, and marbles scarcely inferior to those of Paros; groves of olive, orange, cedar, pomegranate, fig, and lemon trees abound in the well-watered valleys, and a large quantity of fruit, oil, corn, and wine is exported; a white wine it produces is in especial repute. Emery is found in large quantity, especially in the southern parts of the island, 10,980 tons being exported in 1907. 35

*General charts 1837, 2836a.*

*Plan of Naxia bay on 1832. Var. 3° W.*

**Naxia bay** (*Lat. 37° 06' N., Long. 25° 22' E.*), on the western side of Naxos, is semi-circular, more than  $1\frac{1}{2}$  miles wide, about three-quarters of a mile deep, and open to the northward. Mungri point, on the south side of the entrance to the bay, has a large rock off it above water, and is surrounded by shoal ground; at about 4 cables south of the point Mount Strongylo rises to a height of 500 feet.

The south shore of Naxia bay is low, broken, and skirted by rocks and shallow water; the sea runs into a large salt lagoon on the south, and eastward of the lagoon is the plain of Naxia.

Bacchus islet is about a cable in diameter, lies close off the northern point of the bay, and is connected to it by a jetty on which railway lines are laid. The ancient name of the islet was *Palæti*; it derived its modern name from the ruins of a temple of Bacchus, of which only the western portion now remains. The massive proportions have an appearance of remote antiquity; the portal consists of three huge marble slabs, two standing erect on basements, and one laid across on the top.

From Bacchus islet to the southern part of the town the shore is fronted by broken shallow rocky ground, and near the north part of the town, below the surface of the water, are the remains of an ancient massive mole, within which there is a depth of 3 to 4 feet.

**Guardian rock**, above water, with rocky ground round it, lies one-third of a mile northward of Mungri point, and at three-quarters of a cable north-north-westward from the rock is a rocky patch with  $1\frac{1}{2}$  fathoms of water on it. Between Guardian rock and Mungri point there are from 7 to 11 fathoms water.

**Shoal.**—A patch of 26 feet is reported to lie about 3 cables west-south-westward from Bacchus islet, but the position is doubtful.

**Light.**—A light is shown from a mast near the head of the old mole.

**Anchorage.**—The usual anchorage is about half a mile westward of the town, in 6 or 7 fathoms, sand and weeds; further westward the water deepens rather suddenly. A swell nearly always sets into the bay, and the anchorage is not considered as safe as Procopi bay farther south.

**Harbour works.**—Important harbour works have been commenced in the port of Naxia. A mole, to be 460 yards in length, will run from Bacchus islet to the south-west, and another mole, to be 132 yards long, will extend towards the north-west from the point to the west of Agios Georgio church.

These works are for the present suspended, and the ends of moles are unmarked by lights. The construction of the southern mole has made hardly any progress.

*General charts 1837, 2836a.*

*Plan of Naxia bay on sheet 1832. Var. 3° W.*

The quay of the port has undergone important modifications, and others are projected. The depths in the port have been increased.

**Naxia town.**—The town of Naxia, on the northern point of the bay, occupies the site of the ancient town, and in 1896 had a population of 1,761; the white houses rise from the shore one above the other on a conical hill, and afford a pleasing aspect from seaward, though the streets are narrow, intricate, and dirty. An ancient ducal palace is in ruins, and north of the town is the fountain of Ariadne, a small rill.

**Telegraph.**—Naxia is a telegraph station.

*Chart 1837, Paros and Naxos.*

**Procopi bay.**—Procopi point is the western extreme of Naxos, and on its southern side is Procopi bay, which affords good anchorage with all northerly winds in 6 or 7 fathoms, sand and weeds. A rocky shoal, with 4 to 5 fathoms water on it, lies 2 cables southward of the point, leaving between a depth of 6 fathoms.

A *green* sector of light is shown from Krazi point, on the east coast of Paros (*see* page 206) to assist vessels approaching Procopi bay at night through the passage between Amaridi and Chapman rocks.

**Shoals.**—Agios Nikolaos church is situated upon the south-eastern point of Procopi bay, and 3 cables south-westward from this church is a rock with less than 6 feet water over it.

A 4-fathoms patch lies half a mile west-south-westward from the same church.

**Amaridi rocks** (*Lat. 37° 03' N., Long. 25° 20' E.*).—Naxos island is separated from Paros island by a channel  $2\frac{3}{4}$  miles wide, having between the rocks about to be described, and Paros island, a depth of 17 fathoms. Amaridi rocks are a dangerous low ledge of rocks with shoal water, the whole, under the depth of 5 fathoms, occupying a space of half a mile in a north-north-east and south-south-west direction, and lying in mid-channel. The highest rock bears 88° true distant  $1\frac{2}{10}$  miles from Krazi point, Paros; and 207° true distant  $1\frac{7}{10}$  miles from Procopi point, Naxos. These rocks are seen from some distance, and the sea at times breaks heavily over them. A 7-fathoms patch lies nearly half a mile south-south-westward from the southern Amaridi dry rock. The *green* sector of Krazi point light leads northward of the Amaridi rocks.

**Chapman rock.**—A little westward of the line joining Amaridi rocks and Procopi point, and  $6\frac{1}{2}$  cables 213° true from the latter, is a rock with less than 6 feet water over it, called Chapman rock. To avoid these dangers at night, keep the coast of Paros aboard. The *green* sector of Krazi point light leads southward of Chapman rock.

*General charts 1837, 2836a.*

*Chart 1837, Paros and Naxos. Var. 3° W.*

**Aspro and Laro rocks.**—From Agios Nikolaos church point the shore south-eastward is bordered by a bank, with scattered rocks here and there, which extends off nearly half a mile. Aspro rock, one  
 5 mile  $186^{\circ}$  true from the point, and nearly three-quarters of a mile from the shore, is about a cable in diameter, and rises 280 feet above the sea, from the centre of a rocky shoal a third of a mile in extent east and west, under the depth of 5 fathoms. Between the shoal and the shore bank there are 6 fathoms water. At about 2 cables south-  
 10 eastward of Aspro rock are Laro rocks, a cluster above water and 2 cables in extent, with 8 fathoms water between them and Aspro rock.

**Cape Parthénos** projects from the low coast nearly  $1\frac{1}{2}$  miles south-south-eastward of Aspro rock, and is surrounded by shallow water  
 15 and rocks; off it are two or three little islets. Although these islets and rocks are generally steep-to, they should be avoided; the north-eastern islet has a sunken rock with less than 6 feet on it, three-quarters of a cable from its west side.

**Anchorage.**—At  $2\frac{1}{2}$  miles south-south-eastward of Cape Parthénos is Ioannis point, surrounded at a distance of about 3 cables by  
 20 shallow rocky ground; and at three-quarters of a mile farther southward is Kurupa point, projecting to the south, with a small chapel on it. Good anchorage will be found at a short half-mile eastward of this latter point, sheltered from all northerly winds, in 9 fathoms water,  
 25 sand and weeds. Also, similar anchorage will be found off a little bay a little more than a mile east-south-eastward of the above. A small islet, called Black rock, with shallow water around it, lies about two-thirds of a mile from the shore, at  $1\frac{3}{4}$  miles south-eastward of Kurupa point.

**Reported shoal.**—Cape Katomeri (*Lat.*  $36^{\circ}55'N.$ , *Long.*  $25^{\circ}28'E.$ ) is the southern extremity of Naxos island, and a mile west-north-west of the cape is Gaitani point,  $271^{\circ}$  true, 8 cables from which is the  
 30 reported (1884) position of a shoal with  $2\frac{1}{4}$  fathoms on it.

**Current.**—During north-easterly winds, or in calms, the current  
 35 between Paros and Naxos sets to the southward about  $1\frac{1}{2}$  knots an hour, but with westerly winds it sets one knot an hour to the northward. Also between Naxos and the group of isles on the south-east the current is similarly affected, setting through the channels to the south-west and south with north-easterly winds and in calms at the  
 40 rate of  $1\frac{1}{2}$  knots, and with westerly winds to the north-east and north one knot.

**South coast of Naxos.**—The coast from Cape Katomeri, east-north-eastward to Cape Panermo, a distance of a little over 5 miles, is

*General chart 2836a.*

*Plan 1837, Paros and Naxos. Var. 3° W.*

bold and irregular, forming several little bays; there are no off-lying dangers excepting Delo rocks, and the water is all along deep. There is temporary anchorage during fine weather in the little bay of Kalando, about  $1\frac{1}{2}$  miles north-eastward of Cape Katomeri. 5

**Delo rocks.**—This dangerous bed of sunken rocks, on the south coast of Naxos, is about a third of a mile in extent in a north-west and south-east direction, and lies a short half mile south-westward of the headland forming the western side of entrance, and in front of the little bay of Panermo. On this shoal are two rocks with less than 6 feet water on them, lying north-north-west and south-south-east 2 cables from each other, the inner rock being  $3\frac{1}{2}$  and the outer 5 cables from the shore. The latter bears  $244^\circ$  true, and is distant 9 cables from the south-east extreme of Cape Panermo. Between this bed of sunken rocks and the shore there are from 6 to 17 fathoms water. 10 15

**East coast.**—From Cape Panermo, the bold eastern coast of Naxos trends north-north-eastward nearly straight for 8 miles to Cape Mutsoma, a prominent headland projecting eastward about three-quarters of a mile from the general line of coast, and having a large rock at its extremity. 20

**Anchorage.**—In the bight called Mutsoma bay, on the south side of the cape, there is anchorage with all off-shore winds.

**Cape Stauro** (*Lat.  $37^\circ 12' N.$ , Long.  $25^\circ 33' E.$* ), the northern extreme of Naxos, is 8 miles from Cape Mutsoma. The coast between is slightly irregular, with one or two little bays, and the spurs of the hills projecting from Mount Korono, which is  $3\frac{1}{2}$  miles inland (*see page 207*); the water is all along deep, with 44 fathoms at 2 cables north of Cape Stauro. At Apollona bay,  $1\frac{1}{2}$  miles south-east from Cape Stauro, is an unfinished colossal statue, lying in an ancient marble quarry; it is roughly hewn, and 34 feet from head to feet. The natives have always identified it with a statue of Apollo. 25 30

From Cape Stauro the north-west coast of Naxos trends south-westward nearly 10 miles to Naxia, and is clifty for the most part, forming numerous little bays, with sandy beaches at their head. From the cape to Mama point,  $3\frac{1}{2}$  miles south-westward, the coast is steep-to, but thence is bordered by a narrow bank under 5 fathoms, which does not extend beyond  $1\frac{1}{2}$  cables from the various points, with rocks above water and sunken here and there near the shore. At about half a mile south-south-westward of Akapsi point a large rock above water lies on the edge of the bank. 35 40

Between Mama and Akapsi points, about  $4\frac{3}{4}$  miles apart, the shore recedes three-quarters of a mile, forming a bight, in which the depths are moderate. There are no off-lying dangers.

*General charts 2836a, 2606.*



*Chart 1837, Paros and Naxos. Var. 2° 50' W.*

- Makarioë isles.**—These three rocky islets lie directly eastward of Cape Mutsoma; the two northern, Agios Nikolo and Prasini, are nearly connected, having only one fathom of water between them.
- 5 Strongylo, the southern islet, is a quarter of a mile from Prasini, and between there are from 10 to 20 fathoms. Agios Nikolo, the largest of these islets, is irregular in shape, and nearly a mile in extent; the two smaller are each half a mile in length. The water is everywhere deep about them, and the passage between them and Cape Mutsoma
- 10 is  $3\frac{1}{2}$  miles wide, and from 20 to 47 fathoms deep.

A bank, with 16 fathoms on it, lies two-thirds of a mile south-south-westward from the west point of Agios Nikolo.

- Kopria islet.**—The little islet of Kopria, about 3 cables in length east and west, with deep water all round it, lies  $5\frac{3}{4}$  miles south-westward of Strongylo,  $3\frac{1}{2}$  miles from the east coast of Naxos, and  $2\frac{1}{4}$  miles north-eastward of Apano-Kupho, mentioned in the next paragraph.
- 15

- Heraklia and Kupho islets.**—South-eastward of Naxos are several barren rocky islets; the principal beginning from the south-west are Heraklia, Echinosa, Kato-Kupho, Apano-Kupho, Karos, Drima, and Antikaros, besides which there are several smaller, forming altogether a group of twenty-three islands and islets. In 1896 the islands had a total population of 1,829. Traces of ancient buildings have been found on some of them. From the westernmost islet,
- 20 Avelos rock, they extend 15 miles in an easterly direction,  $13\frac{1}{2}$  miles north-eastward, and the eastern islets of the group cover a space of about 8 miles in a north-north-west and opposite direction. They are separated from Naxos by a passage 2 miles wide, which, with the exception of Delo rocks described on page 211, is clear and deep.
- 25
- Kato-Kupho and Apano-Kupho, the two northernmost islets of the group, are only about  $1\frac{1}{2}$  cables apart; in the channel between the depths are 3 to  $4\frac{1}{2}$  fathoms. In the bight which they form on the south-east, there is temporary anchorage in 6 to 8 fathoms water, sandy bottom, but exposed to winds between north-east and south-east.
- 30
- The water about these islets is generally deep and free from danger.
- 35

*Chart 1866, Amorgos and Denusa islands.*

- DENUSA ISLAND** (ancient *Lelandros*) (*Lat. 37° 07' N., Long. 25° 50' E.*) is an irregularly formed islet about 3 miles in diameter, and 1,605 feet high. On its north-eastern side is Rusa bay, with a cove at its head, and on the north side of the bay is the little islet of Trigono, which shelters the cove from the north-east; the islet is connected to Denusa by a bank with 4 fathoms water on it. Off the
- 40

*General charts 1866, 2836a, 2606.*

*Chart 1866, Amorgos and Denusa islands. Var. 2° 50' W.*

point between Cape Kalota and Aspron point, the north and west extremes, respectively, of the island, are some rocks showing above water; on the south coast are two or three little bays. There were 136 inhabitants in 1896. Between Denusa and the Makarie isles the water is deep, and the passage nearly 4 miles wide. 5

*Chart 2836a, Grecian archipelago, south portion.*

**Buey (Melantii) rock.**—This isolated little islet or rock, situated in *lat. 37° 14½' N., long. 25° 56' E.*, is only 1½ cables in length in a north-west and south-east direction, 180 feet high, pyramidal in shape, bold and rugged, and surrounded by a narrow bank; rocks, above and below water, extend off more than half a cable from its east end, off which, at the distance of a cable from the shore, there are from 20 to 45 fathoms. Buey rock lies 7½ miles north-eastward of Denusa, and 17 miles, 193° true, from the lighthouse on Cape Papas, the south-west extreme of Nikaria. See page 377. 10 15

*Chart 1866, Amorgos and Denusa islands.*

**AMORGOS ISLAND** is 17½ miles in length east-north-east and west-south-west, with an irregular coast line, its breadth being from one to 3½ miles. It is mountainous throughout, the greatest elevation being at the north-east end, where Mount Krikelos is 2,560 feet high; Mount Agios Elias, in the middle, is 2,175 feet, and Mount Korax, at the south-west end, 1,890 feet high. The island is tolerably well cultivated, and there are places of some beauty in the narrow valleys which intersect the hills; the soil produces corn, oil, figs, tobacco, and cotton, all of good quality, and there is a manufactory of earthenware. There were three ancient towns, all on the north-western side of the island, and there are still vestiges of buildings, sculptures, pillars, &c., proving them to have been of some consequence in former days. 20 25 30

The island is divided into two districts, Arkesini to the south-west and Aigialis to the north-east, the dividing line running eastward from Port Vathy.

There are two good anchorages, Port Vathy and Kaloterion bay, both on the north-western side of the island, and eleven villages, besides the scattered houses on the beach at Port Vathy, containing altogether, in 1917, about 3,500 inhabitants. 35

**Cape Kalotari** (*Lat. 36° 48' N., Long. 25° 45' E.*).—In the nook on the eastern side of Cape Kalotari, the western extreme of Amorgos, is a little port fit for coasters, having 10 fathoms water at the entrance, and 3 fathoms three-quarters of a cable from the beach. 40

Near the cape is the village of Kolo Phana, and another village called Paradisi is at the head of the inlet that lies three-quarters of a mile eastward of Cape Kalotari.

*General charts 872, 2836a, 2606.*

*Chart 1866, Amorgos and Denuša islands. Var. 2° 50' W.*

- Gravusa islet**, a quarter of a mile northward of Cape Kalotari, is separated from Antikaros, the south-eastern islet of the Heraklia and Kupho group, already alluded to, by a deep and clear passage, 2½ miles wide. It is the largest of several small islets and rocks round Cape Kalotari, is a mile in length north and south, irregular in shape and the narrow passage between it and the coast is yet further contracted by rocky ground round the south end of Gravusa. Temporary anchorage may be had in 10 to 13 fathoms a quarter of a mile from the shore on the west side of Gravusa.

- Petalidi**.—At about 2½ miles north-eastward from Cape Kalotari and 2½ cables from the shore is the islet of Petalidi with shoal water extending 1½ cables westward; it shelters on the south the small narrow port of Akrotiri, an inlet half a mile deep. A small vessel might anchor here, but a sailing vessel would have difficulty in getting out.

Near the head of the port of Akrotiri is a village, Kalotaritisas, and on the hill, 1¼ miles eastward from the head of the port, is the village of Arkesini. Vroutzi village is at the head of a small bay three-quarters of a mile southward of Port Vathy.

- Port Vathy**, on the north-west side of Amorgos island, and 4¾ miles from Gravusa islet, is a safe little port, although the squalls in north-easterly gales are very heavy, but the holding ground is soft mud, and vessels ride in safety. There is no danger in entering, as the shore is steep to all round. The Austrian man-of-war *Spalato* was at Port Vathy in 1897, and her captain reports that his ship, 328 feet long, had not swinging room at single anchor. He also reports that two windmills in line make a good leading-mark in; the front mill being situated close to the shore, and the other, in ruins, standing on higher ground about 109 yards eastward of the former.
- The village of Katapola is on the south side and in 1896 had a population of 110; there are also blocks of houses on the north and east sides. On a hill south of the port and overlooking it, are some few remains of buildings; and on Kastri point about 2 miles south-west of the port, is a ruined fort.

- LIGHT** (Lat. 36° 50' N., Long. 25° 51' E.).—On Cape Elias (Agios Elias), the northern entrance point of Port Vathy, at 66 yards from the shore, is a square stone tower on a dwelling, 34 feet high, from which a light is shown at an elevation of 132 feet.

- Supplies**.—A few provisions may be had, and a supply of good drinking water may be procured by boats from a fountain close to the Health office.

**Communication**.—Greek steamers from Syra and adjacent islands call here. It is also a telegraph station.

*General charts 872, 2836a, 2606.*

*Chart 1866, Amorgos and Denusa. Var. 2° 50' W.*

**Trade.**—Tobacco and cattle are exported, the value of the latter being about 30,000 francs annually.

**Kastron (Khora),** the principal village or town, stands on a hill about  $1\frac{1}{2}$  miles eastward of Port Vathy, and is clustered around an old ruined Venetian tower. It contained, in 1896, a population of 997. 5

The village of Vlhada is situated on the east side of the entrance to an inlet at about three-quarters of a mile eastward of Dysari point, northward of Cape Elias. 10

**Kaloterion bay.**—Nikuria island,  $3\frac{8}{10}$  miles north-eastward of Cape Elias, is  $2\frac{1}{3}$  miles in length, rather more than half a mile in extreme breadth, and at about one-third from its west end, rises abruptly to a height of 1,140 feet; its east end is connected to Amorgos by shallow ground. Lying somewhat obliquely to Amorgos, the island forms with it on the south Kaloterion bay, where a vessel may anchor as convenient, south-south-eastward of a little church, in 18 to 20 fathoms, good holding ground. In a sailing vessel, it is almost necessary to have a fair wind to enter, as the bay is subject to calms, squalls, and variable winds. 15 20

The bay is three-quarters of a mile wide between Atimo islet, 276 feet high, and the shore of Amorgos; Atimo is separated from Nikuria on the north by a narrow, deep channel.

**Shoal.**—A small rocky patch, with 5 fathoms on and deep water round it, lies in the centre of the bay, and bears  $108^\circ$  true, distant  $7\frac{1}{2}$  cables from the south extreme of Atimo islet. 25

**Aigiali (Agi' Anna) bay** (*Lat.  $36^\circ 54'$  N., Long.  $25^\circ 59'$  E.*), east-north-eastward of Nikuria island, is a mile deep, and nearly half a mile wide at its head, where there is a sandy beach, and a village consisting of a few scattered houses. The bay is open to the westward, and the water deep, but if necessary a vessel might anchor in the north-eastern corner. There is a mooring buoy for small craft to make fast to. 30

On the north shore of the bay is the village of Fhokio Tripa.

The village or town of Langada, containing, in 1896, a population of 647, is on the hill a mile eastward of the bay, and that of Tholari with 395 inhabitants, nearly a mile to the north-west of Langada. 35

**Water.**—A good stream of water runs into the bay.

**North coast.**—From Aigiali bay, the coast to Cape Prosino, the eastern extreme of Amorgos, is high and bold, with deep water; between the bay and Cape Villakarda, the northern extreme of the island, there are two little inlets. Nearly 4 cables from the coast, and 40

*General charts 872, 2836a, 2606.*

*Chart 1866, Amorgos and Denusa. Var. 2° 50' W.*

about  $1\frac{1}{2}$  miles north-north-eastward of Cape Langada, is a large rock or islet 30 feet high, with depths of 54 fathoms around it.

**South-east coast.**—The south-east coast of Amorgos consists principally of high cliffs, from which, during northerly gales, the wind rushes down in heavy squalls, lashing the water into foam, and rendering it necessary for sailing vessels passing to give this side of the island a wide berth; there is no anchorage or shelter. The surface of the island is broken into detached rocky peaks, with cultivated valleys between them.

At Panagia, a hill 1,080 feet high, midway along the south-east coast, and half a mile eastward of the village of Kastron, is a monastery, built in the mouth of a cavern on the face of the cliffs; it was built thus to secure it from the attacks of pirates, by whom these islands were formerly visited.

**Liadi islets** (*Lat. 36° 54' N., Long. 26° 11' E.*).—Nearly 4 miles eastward of Cape Prosino (Krikelos) are the Liadi islets, four in number, large and small, which extend nearly a mile north and south. The northern is the largest and 200 feet high, barren and unproductive; the southern is low and flat, and the shoal bank which connects them extends westward about a quarter of a mile. The Liadi islets belong to Greece.

**Current.**—The current between these islets and Amorgos sets to the south-east, rarely less than three-quarters of a knot an hour, but stronger according to the force of the north-easterly wind.

For Kinaros island, *see* page 356.

*Chart 2753, The islands of Polykandro, Sikinos, and Nio.*

**POLYKANDRO (PHOLEGANDROS).**—The passage between this island and Polino (page 176), eastward of Milo, is 10 miles wide, clear and deep. Polykandro is 7 miles in length north-west and south-east, the northern part being about  $1\frac{1}{2}$  miles in breadth and 1,022 feet high, the southern part  $2\frac{1}{4}$  miles in breadth and 1,363 feet high; the island is contracted in the middle to a breadth of half a mile. The population in 1907 was 962. It is well cultivated, and produces corn, cotton, a little wine, rears sheep, and abounds in game. The modern town, containing, in 1896, a population of 590, is at the foot of the hill on which the ancient city stood, and about  $1\frac{1}{2}$  miles north-westward from Port Karavostasi.

**Port Karavostasi.**—There is no good harbour in the island, only a small cove about 2 cables wide, with a beach called Port Karavostasi, at one mile north-westward of the eastern extreme of the island. In the vicinity of the cove there are two or three little islets or rocks near the shore.

*General charts 872, 2836a, 2606.*

*Chart 2753, The islands of Polykandro, Sikinos, and Nio. Var.  $3^{\circ}10' W$ .*

**LIGHT.**—A light is shown, at an elevation of 53 feet, from an iron standard, 23 feet high, erected on the north entrance point of Port Karavostasi.

**Communication.**—Port Karavostasi is a telegraph station. 5  
Greek steamers call here from Syra and adjacent islands.

**The coast** of Polykandro is high and iron-bound, more especially the south-eastern part, with rocks scattered here and there close to the shore, but no off-lying dangers. A bay called Port Vathy, on the south-western side of the island, is entirely open, with deep water until 10  
within half a mile of its head.

**Adelphia rocks** (*Lat.  $36^{\circ}37' N$ , Long.  $25^{\circ}00' E$* ).—At  $5\frac{1}{2}$  miles to the east-north-eastward of the east end of Polykandro is the south-western end of Sikinos, and between the two is a chain of rocks or islets. The western group, Adelphia rocks, 4 cables in length, consists 15  
of two islets connected by a reef; the eastern islet is 306 feet high, and the western 179 feet.

**Shoal.**—A shoal, with  $2\frac{1}{2}$  fathoms on, and deep water round it, lies 3 cables north-westward from a large rock at the northern point of the eastern Adelphia rock. 20

**Kardiotissa**, the central and largest islet of the chain, lying one mile east-north-eastward of Adelphia rocks, is  $1\frac{1}{4}$  miles in length in an east-north-east and west-south-west direction, and 505 feet high; the western end is bordered by a bank, extending one cable from the shore, with which exception the water is deep all round the islet; over 25  
the central point on the south coast is a church.

**Kaloyeros and Karavos** are united by a reef, and shoal water surrounds the islets, except on the south-east side; these two islets are the easternmost of the chain, and lie between Kardiotissa and Sikinos, 3 cables from the latter, with deep water between. 30

**Shoal.**—A shoal, with  $3\frac{3}{4}$  fathoms over it, lies nearly in mid-channel, between Kardiotissa and Karavos, bearing  $256^{\circ}$  true distant  $3\frac{1}{4}$  cables from the latter, and  $4\frac{1}{2}$  cables from the east point of Kardiotissa; it is indicated by a sudden change in the colour of the water, and extends about 220 yards in a north-east and south-westerly direction. 35

With the exception of the shoals mentioned, the water is deep between and around these islets, and a vessel may pass in mid-channel between them.

**SIKINOS ISLAND** is  $7\frac{1}{2}$  miles in length in a north-easterly and south-westerly direction, with an average breadth of about 2 miles. 40  
The island in places is rocky and barren, but other parts produce wheat, figs, and wine. It has no port, but the skala or landing place is about

*General charts 2836a, 2606.*

*Chart 2753, The islands of Polykandro, Sikinos, and Nio.* *Var. 3° W.* midway on the south-eastern side, in a cove with a beach, where boats are hauled up.

**LIGHT** (*Lat. 36° 40' N., Long. 25° 09' E.*).—A light is shown, at an elevation of 85 feet, from an iron post, 23 feet high, erected on the east point of Skala bay.

**Sikinos village** stands on an elevated ridge about an hour's walk from the skala, and contains the whole population of the island, amounting to 627 in 1907. The remains of the ancient *Sikinos*, consisting of some foundations and fragments, occupy an abrupt cliff westward of the ridge; a little farther in the same direction is a small temple of Apollo, of bluish marble, in good preservation, now used as a Greek church, and supposed to have been built about the 2nd or 3rd century B.C. The water all round the island at a distance of a quarter of a mile is deep.

**Telegraph.**—The village of Sikinos is a telegraph station.

**NIO (IOS) ISLAND**, the reputed burial place of Homer, is separated from Sikinos by a clear and deep channel nearly 3 miles wide, is  $9\frac{1}{2}$  miles in length in a north-north-west and south-south-east direction, with an average breadth of 4 miles. Nio is rocky and mountainous, with a granitic base and calcareous summit, its greatest elevation being 2,410 feet above the sea. It has a softer and more genial aspect than Polykandro or Sikinos, and produces cotton, oil, wine, and a small quantity of corn. The coast is indented with several bays, and on the western side is the port and town of Nio. The population of the island in 1907 was 2,090.

*Plan of Port Nio on chart 2753.*

**Port Nio (Ios)**, open to the southward, is nearly a mile deep and a quarter of a mile wide, shoaling from 20 fathoms water at the entrance to 5 fathoms at about a cable from the low shore at its head. The town, containing nearly all the inhabitants of the island, occupies part of a small hill about half a mile inland, rising from the east side at the head of the port; it is the site of the ancient city of which some foundations are still visible, and a zigzag paved road leads to it from the skala.

**Shoals.**—Cape Exeris, the eastern point of entrance to the port, is surrounded by rocks, which extend off more than half a cable, and a rock awash lies nearly a cable from the shore, about 3 cables to the north-westward of Cape Phanari. (*See view of entrance to Port Nio, on chart 2753.*)

**LIGHT** (*Lat. 36° 43' N., Long. 25° 16' E.*).—A light is shown, at an elevation of 108 feet, from a turret on a white hut, 21 feet in height,

*General charts 2753, 2836a, 2606.*

*Plan of Port Nio on chart 2753. Var. 3° W.*

situated about 130 feet within the extremity of Cape Phanari, the western entrance point of Port Nio.

**Telegraph.**—Port Nio (Lat.  $36^{\circ} 43' N.$ , Long.  $25^{\circ} 17' E.$ ) is a telegraph station. 5

*Chart 2753, The islands of Polykandro, Sikinos, and Nio.*

**Manganari bay.**—Temporary anchorage may be found with all northerly winds in Manganari bay, at the south end of Nio island, in from 10 to 15 fathoms water, over sand.

**Coast.**—A little islet or rock will be observed here and there close to the shore, but there are no off-lying dangers, and the coast may be approached to a reasonable distance. 10

The passage between Petaleitha-nisi, at the northern end of Nio, and Avelos rock, off the western end of Heraklia to the north-eastward (see page 212), is  $4\frac{1}{2}$  miles wide, clear and deep. 15

*Chart 2836a, Grecian archipelago, southern part.*

**Anedro (Anhydron).**—This little island is uninhabited, and lies in a central position between Nio, Amorgos, Santorin, Anaphi, and Stampalia, being 9 miles to the south-south-westward of the western part of Amorgos, the nearest land. Near its south-eastern end is a conical rock, and to the south-west of the island is a rock awash. 20

*Chart 2043, Santorin island.*

**SANTORIN (THERA).**—This island in early times was inhabited by the Phenicians, and known by the name of Calliste, or the Beautiful isle; subsequently it was colonised under Theras from Sparta, after whom it was named. The island was originally circular, but it is now more in the shape of a crescent, Therasia island and Aspro islet on the west having been separated from it by an earthquake about B.C. 237. The half-moon interior is the crater of a submarine volcano, and in places is upwards of 200 fathoms deep. In the middle of the crater are three islets thrown up by volcanic agency, of which the largest, Neo Kaimeni or New Burnt isle, a mass of cinders and lava, now 438 feet above the sea, originally appeared in 1707, but was largely added to by the last eruption in 1866. On the north-east side of this islet is Mikro Kaimeni or Little Burnt isle; on the south-west is Palæo Kaimeni or Old Burnt isle, 320 feet high, which emerged B.C. 197.\* 30 35

\* The following are the dates of the known eruptions in this island, viz., B.C. 197, A.D. 46, 726, 1573, and 1707; the last continued until 1713. All these took place in the centre of the crater, where the cone is now formed by the Kaimeni or Burnt islets. At the end of January, 1866, signs of a new eruption were observed; on the 1st of February stones were thrown up, and from this date the new volcano went on increasing, and by the end of the month was about 100 feet above water. The first great eruption occurred at 10h. a.m. on the 20th February, followed on the 21st and 22nd by similar eruptions. From this date, till the autumn of 1870, these phenomena continued in unceasing succession. Enormous masses of lava rose above the sea, surpassing the size of those projected in 1707. In January, 1868, Mount George, still without a crater, but under continuous eruptions, formed a regular cone, 325 feet high, to the south of Neo Kaimeni. At the end of August, 1870, these phenomena ceased, but smoke was still issuing from the crater late in 1874. (See Murray's Handbook for Greece, &c.)



*Chart 2043, Santorin island. Var. 3° W.*

Santorin island extends nearly  $9\frac{1}{2}$  miles in a north-north-west and south-south-east direction; in no part is it more than 3 miles in breadth, which decreases near the north and south extremities to about 7 cables.

- 5 The shores round the inner curve are the edges of the crater, and the dark rocky precipices, varying in height from about 500 to 1,000 feet, have a dismal though interesting and picturesque appearance, and form a precipitous slope at an angle of  $45^\circ$ . It is along the edges of these precipices that the principal towns are built—Epanomeria at  
10 the north-western horn, Merovuli, and Thera, the capital, in the centre of the curve. At Skaro (*Lat.  $36^\circ 26' N.$ , Long.  $25^\circ 26' E.$* ), near Merovuli, on the overhanging cliffs, is a ruined Venetian fortress; the houses perched along the edges of the cliffs present a strange aspect, and most of them throughout the island are partly excavated in the  
15 porous rock.

- The population in 1907 numbered 14,301; they are honest, industrious, and much attached to their volcanic island. There are several vessels and small craft belonging to the island, which find shelter in the creeks of Kaimeni. There are two landing places, one below the  
20 capital town of Thera, the other at Athenous bay, two miles further south, each with a steep ascent up the cliffs.

- Aspect.**—The northern half of the island is composed of volcanic material, iron, pumice, lava, &c.; and three remarkable mountains occupy the space between Merovuli and the village of Phinika, about  
25 a mile eastward of Epanomeria. In the southern part, and where the island is broadest, Mount Elias, a conical peak and the highest point of the island, rises 1,887 feet above the sea; on the east side of the mount is a ridge called Sellada, by which Mount Elias is united to  
30 Messa Vuno (half mountain), probably so called from its being a little more than half the size of the former. Messa Vuno is a precipitous mass, on which are the remains of the ancient city of Thera, and it terminates at the south-eastern extreme of the island in Cape Messa Vuno.

- Productions, &c.**—The soil of Santorin, of decomposed pumice-stone, is fertile and carefully cultivated, more especially in the south  
35 and south-eastern districts of the island, rendering it well worthy, even at this day, of its ancient name *Calliste*. It produces a little corn and cotton, and an abundance of wine of some strength, which with age becomes good and is exported. Water and firewood are scarce,  
40 and the inhabitants are at times obliged to procure the former from Nio or Amorgos.

**Trade.**—The exports, principally wine and pozzolana, were valued in 1907 at £30,257, and the imports at £9,928. In 1907 the island was visited by 678 vessels, of which none were British.

*General charts 2836a, 2606.*

*Chart 2043, Santorin island. Var. 3° W.*

**Consul.**—A British Consular agent resides at Thera.

**Communication.**—Steamers from Syra and the principal islands of the Cyclades call at Thera. There is telegraphic communication with the rest of the world, the telegraph office being at the village of Epanomeria. 5

**LIGHT** (*Lat. 36° 27' N., Long. 25° 23' E.*).—A light is exhibited, at an elevation of 377 feet, from a square masonry tower above a dwelling, 26 feet high, at Epanomeria, 240 yards from the coast and 2½ cables northward of the south-west point of the northern horn of Santorin. 10

**Therasia.**—On the west side of the crater is the island of Therasia and the islet of Aspro, each separated from Santorin by the eruption B.C. 237. Therasia is rather more than 3 miles in length north and south, about a mile in breadth, and the eastern coast rises nearly perpendicularly to about the height of 936 feet, agreeing exactly in strata and elevation with that of Thera opposite; but the land slopes rapidly to the west, where the coast is comparatively low. The soil produces cotton and grapes. There are four villages on the island, the largest, Manola, with a population in 1896 of 398, being situated on top of the cliffs on the east coast. The population of the whole island in 1896 amounted to 855. 15

The island is separated from the north-western end of Santorin by a passage 8½ cables wide; but its northern part is bordered by shallow rocky ground, and a rocky shoal with less than 3 feet water on it lies 3 cables eastward of Cape Riva, the north extreme of Therasia island; a reef also extends from Tino point, the next point south-eastward from Cape Riva. The north and west coasts of the northern end of Santorin are also bordered by shallow water, but in mid-channel, in the northern entrance between the two islands, the depth is 195 fathoms. See view of the north entrance to the crater on chart 2043. 20

**Mansell shoal.**—The little islet or rock of Kimina lies close off the south-western point of Therasia, and at three-quarters of a mile 181° true from Kimina is Mansell shoal, the crown of which is about 1½ cables in diameter, with 1½ fathoms water on it. There are 3 to 5 fathoms close round the shoalest head, a patch of 5 fathoms at 1½ cables south of it, and 13 and 25 fathoms at half a mile westward; a little more than a cable eastward of the shoal the water deepens to 125 fathoms. 25

A vessel should give this danger a wide berth, and not approach its western side into less than 15 fathoms water. The north extreme of Neo Kaimeni, well open of Cape Tripiti (the south-east extreme of Therasia) 74° true, leads southward of Mansell shoal. 30

*General charts 2836a, 2606.*

*Chart 2043, Santorin island. Var. 3° W.*

**Aspro islet** (*Lat. 36° 23' N., Long. 25° 22' E.*), so called from the white appearance of its summit, is on the inner edge of the bank fronting the southern entrance to Santorin, and nearly midway  
 5 between Therasia and Cape Akrotíriou, the southern horn of Santorin. Aspro is about  $3\frac{1}{2}$  cables in length, about 300 feet high, and surrounded by rocky shoal ground extending 2 cables northward and 3 cables to the southward. A patch with  $2\frac{1}{2}$  fathoms on it also lies  $1\frac{3}{4}$  cables east-south-eastward of the eastern extremity of Aspro islet. The islet being  
 10 on the brink of the crater, the water between it and Therasia and towards the Kaimeni is deep; but the bank from the islet to Cape Akrotíriou has from 6 to 12 fathoms water on it, sand, or sand and weeds. This bank, with depths of 10 to 12 fathoms, curves round westward of Aspro islet and Mansell shoal, and joins the bank under  
 15 10 fathoms, which extends from the south-west point of Therasia. *See* view of south entrance to the crater on chart 2043.

**Aspro islet anchorage.**—Temporary anchorage during fine weather will be found about 3 cables south-west of Aspro islet in 9 or 10 fathoms water, sand and weeds.

20 **Cape Akrotíriou**, the south-western extreme of Santorin, is bordered by a rocky bank which extends off about a cable; inside the crater, at about  $1\frac{1}{3}$  miles north-eastward of the cape, are some rocks, covered and uncovered, extending nearly 2 cables from the shore, but they are out of the track of vessels.

25 The land immediately over the steep cliffs of the cape is 373 feet high, and rises at  $1\frac{3}{4}$  miles eastward to a hill 600 feet above the sea.

**LIGHT** (*Lat. 36° 21' N., Long. 25° 22' E.*).—A light is shown, at an elevation of 321 feet, from a square tower on a dwelling, 35 feet in height, situated 380 yards eastward of the extreme of Cape Akrotíriou.

30 **Anchorage bank.**—Vessels may bring up east of Mikro Kaimeni, on Anchorage bank, in  $5\frac{1}{2}$  fathoms, but its area is small, being only about 340 yards across, and steep on all sides, falling rapidly to 30 and 50 fathoms. The bottom is rock, and can generally be seen; the anchor should be dropped if possible well in on the bank, as the  
 35 ground is not good for holding, and the water deepens suddenly.

**Anchoring marks.**—The windmill situated on the west side of the town of Akroteri, on Santorin island, in line with the south-east extreme of Neo Kaimeni bearing 194° true; the north extreme of Mikro Kaimeni in line with the southern of three windmills at Manola,  
 40 Therasia, 296° true; and the southern slope of the hill north of the crater of Neo Kaimeni in line with the boat passage separating the two islands, about 262° true, mark the centre of the bank. The two northern of the three windmills on Therasia are close together.

*General charts 2836a, 2606.*

*Chart 2043, Santorin island. Var. 3° W.*

**At night**, the limiting line of the Epanomeria light, bearing 330° true, passes over the centre of Anchorage bank. During strong winds it will be necessary to keep the lead over the side, and to have marks ashore in case of dragging the anchor. 5

**Landing.**—The skala or landing place under Thera is built on a small natural platform sufficiently large to contain a few houses; at the back is a steep cliff, in which is cut a winding pathway to the town above. Merchant vessels are secured at the skala by chains to bollards cut in the cliff for the purpose, but there is no anchorage. There is a mooring buoy suitable for vessels of about 3,000 tons, at about a cable from the landing place at Thera. 10

**Light.**—A light is shown on the wharf at Thera when a steamer is expected.

**Port Megalo** is the creek formed between Neo Kaimeni and Mikro Kaimeni eastward of it; it is open to the north, and extends southward about one-third of a mile, being from 70 to 80 yards wide in the narrowest part, with from 7 to 15 fathoms water. As many as twenty vessels, consisting of brigs and small craft, lie here at times secured to the shore, where there are bollards for the purpose. Vessels are also secured in the other creeks of the Kaimeni islets. 15 20

A boat passage, about 10 feet wide and 2 feet deep, leads from the eastward into Port Megalo, south of Mikro Kaimeni. Sulphurous water emitted from a spring at a temperature of 125°, easily distinguished by its colour, and of a strong odour, escapes through this passage; if it be desired to clean the copper, a vessel can be secured by hawsers where the water is discoloured, and in a few days all foreign substances will drop off. Summer is the best time for visiting the place for this purpose; in winter the winds are fresh and strong in squalls. It would be well to examine the locality prior to entering it, in case any alteration should have taken place. 25 30

A vessel may also enter Port Megalo for the same purpose, anchor in 10 fathoms, and secure to bollards on either side with bow and stern-fasts, which is the safest and most effectual way.

The prevailing winds in the summer are strong from the north-east, and in winter from the southward. 35

**South coast.—Anchorage.**—In the bay on the south coast of Santorin, and about a mile east-south-eastward of Cape Akrotíriou, there is excellent anchorage in 7 or 8 fathoms water, sand and weeds, sheltered from all northerly winds, and round eastward to E.S.E. At the east point of the bay, rocks above water extend a cable from the shore, with sunken dangers round them. 40

**Cape Exomiti** (*Lat. 36° 20' N., Long. 25° 27' E.*).—Between the rocky point just mentioned and Cape Exomiti, 3 miles to the east-

*General charts 2836a, 2606.*

*Chart 2043, Santorin island. Var. 3° W.*

south-eastward, the coast forms a bay, in the centre of which, at about 4 cables from the shore, there is similar anchorage to that just alluded to. Cape Exomiti, the southern extreme of Santorin, is a low point  
 5 at the foot of Mount Platanimos, a limestone hill, on the south-east side of which are many ancient tombs cut in the rock. The cape is surrounded by rocks and shallow water, which extend southward about  $1\frac{1}{4}$  cables, and in continuation of the rocks to the westward are the remains of ancient moles. These remains are under water, extend  
 10 westward about  $4\frac{3}{4}$  cables from the cape, and 2 cables west-south-westward from a point (with a hot spring near it) situated half a mile north-westward of the cape; they enclose an area of about  $3\frac{1}{2}$  cables in extent, with from 2 to 4 fathoms water. From the extremity of the north-western mole the shore westward is skirted by rocks with  
 15 shoal water.

**Cape Messa Vuno.**—From Cape Exomiti a low shore trends north-eastward  $2\frac{1}{10}$  miles to the high rugged steep cliffs of Messa Vuno, the termination of which is the cape of the same name, and the south-eastern extreme of the island. At 2 miles northward of the cliffs is  
 20 Kamari, a low rounded point, and about half a mile to the north-west of the point is a monolith 100 feet high. As this monolith has been used for the construction of breakwaters at Kamari its height has probably been reduced.

**Anchages.**—There is anchorage in 9 fathoms with off-shore  
 25 winds, about three-quarters of a mile north-eastward of Cape Exomiti, the latter bearing  $256^\circ$  true; also in the same depth of water, about half a mile southward of Kamari point (*Lat.*  $36^\circ 24' N.$ , *Long.*  $25^\circ 30' E.$ ).

**Coast.**—From the latter point the coast trends north-west and westward about 8 miles to the north-western extreme of the island.  
 30 To the north-westward of Kamari point the 5-fathoms line of soundings curves off half a mile, and the north coast is bordered by a bank, and should not be approached too closely.

**Harbour works.**—A harbour for small vessels, about half a mile to the northward of Kamari point, formed by two breakwaters,  
 35 was commenced in 1905, but has since been abandoned.

**Kolumbos bank.**—At  $3\frac{1}{2}$  miles  $43^\circ$  true from Cape Kolumbos, the north-eastern elbow of Santorin, is a bank of cinders with 10 fathoms water on it, about 2 cables in diameter within the 20-fathoms line, being the remains of a volcanic island, which first  
 40 appeared during the earthquakes at Santorin in 1649.

*Plan of Cristiani islets on chart 2043.*

**Cristiani islets** are about  $9\frac{1}{2}$  miles south-westward from Cape Akrotirion, the south-western point of Santorin. Cristiani, the larger

*General charts 2836a, 2606.*

*Plan of Christiani islets on chart 2043. Var. 3° W.*

and northern islet, nearly a mile in length north and south, and two-thirds of a mile in greatest breadth, has a peak at the south-western end, 914 feet high; its shores are rugged and bold, and with the exception of some scattered rocks close inshore on the eastern side, the water is deep. 5

The southern islet, named Askania, is  $4\frac{1}{2}$  cables in length, 470 feet high, skirted all round by rocks, and separated from the northern islet by a passage about a third of a mile wide, but there are rocks on either side, and nearly midway is a  $2\frac{1}{2}$ -fathoms shoal. 10

**Eskhati rock.**—At 9 cables south-eastward of Askania is Eskhati rock, less than a cable in length, and 45 feet high; rocks lie close to its north-east and south-west ends, but the water a cable from it is deep.

*Charts 872, 2836a.*

**ANAPHI (NAPHIO)** (*Lat. 36°22' N., Long. 25°47' E.*), about  $12\frac{1}{2}$  miles eastward of Cape Messa Vuno, Santorin, is 6 miles in length east and west,  $3\frac{1}{2}$  miles in greatest breadth, and 1,530 feet high. Its hills are barren and naked, nor are the valleys and plains much more fruitful, and they are but little cultivated. A small quantity of wheat, oil, honey, and wax are the only products. The island contains some excellent springs, and abounds now as of old in red-legged partridges. Anaphi was celebrated of old for its temple of Apollo Ægletes, and at the eastern end of the island there were remains of this temple in the walls of a Greek monastery occupying the same site, but they were destroyed by an earthquake in 1888. The modern village is near the south-western end of the island, and, in 1907, contained 579 inhabitants. 20 25

**Telegraph.**—The village of Anaphi is a telegraph station.

**Coast.**—The coast is skirted here and there by rocks covered and uncovered, and near the south side are the two little islets or rocks of Agios Nikolo and Rukana, 12 and 3 feet high respectively, the latter being 3 miles from Kavo Kalamos, the eastern end of the island. At  $1\frac{1}{2}$  miles southward of Rukana are the two little islets or rocks of Ephtanah (Phlini), 50 and 60 feet high, with rocks above water on the east side of the eastern islet. Between the Ephtanah and the coast there are from 26 to 6 fathoms water on Anchorage bank, and here, under favourable circumstances or in case of necessity, a vessel will find anchorage. 30 35

*Chart 872, Kalimno to Rhodes.*

The little islet of Pakhia, 740 feet high, lies south-south-westward about  $4\frac{1}{2}$  miles from the east end of Anaphi, and  $1\frac{3}{4}$  miles eastward of

*General charts 2836a, 2606.*

*Chart 872, Kalimno to Rhodes. Var. 2° 50' W.*

Pakhia is the islet of Makra, 420 feet high, both on the south-eastern part of the bank which surrounds Anaphi.

**Makra rock.**—A quarter of a mile from the north-east extremity of Makra islet is a rock 3 feet high, and about one-third of a mile eastward of it is a patch with 5 fathoms water on it called **Makra rock** (Lat.  $36^{\circ} 16' N.$ , Long.  $25^{\circ} 55' E.$ ).

*General charts 2886a, 2606.*

## CHAPTER VI.

THE COAST OF GREECE FROM EURIPO STRAIT TO THE KARA SU RIVER,  
INCLUDING THE ADJACENT ISLANDS.

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VARIATION decreasing about 9' annually.

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*Chart 1554, Talanta channel, &c. Var. 3° 30' W.*

**KHALKIS.**—**North roadstead** (*Lat. 38° 30' N., Long. 23° 37' E.*).—The space from Kaki Képhali lighthouse northward to the parallel of Cape Gaidaro may be considered the northern port or roadstead of Khalkis, as, with the exception of the shoals presently mentioned, there are anchoring depths all over it, in from 17 to 10 fathoms, mud bottom, sheltered from westerly winds by Cape Gaidaro and the shoal ground which extends nearly two-thirds of a mile north from it, though in the winter season it would be advisable to anchor within about a mile of the town of Khalkis. 5



Kastros.

Veli Baba.

Khalkis.

Kara Baba, 220° true.

Euripo strait, northern entrance.

*Plan 2802, Town and Strait of Euripo.*

**The strait north of the bridge** is bordered on either side by shallow water, but which leaves in the central part a narrow, but clear, passage. From the point of the Quarantine establishment (in ruins) on the mainland, 4 cables from the bridge, rocky shoal ground extends off half a cable, and also the same distance from Tekies (Tekes) point on the opposite side of the strait; the extremes of these shoal spits are marked by light-buoys, the passage between them is, about 120 yards wide, and when the buoys are in position there will be no difficulty in keeping in mid-channel. 15

**Light-buoys.**—The extremity of the shoal ground off the quarantine establishment is marked by a green light-buoy showing a *green flashing light every three seconds*, and the extremity of the shoal ground off Tekies point by a red light-buoy showing a *red flashing light every three seconds*. 20

*General charts 1554, 426, 2836b.*



*Plan 2802, Town and Strait of Euripo. Var. 3° 30' W.*

**Caution.**—The position of the buoys is not to be relied upon.

**Telegraph cable.**—A cable crosses the strait between the shoal spits just mentioned.

- 5 **Water.**—There is no water to be procured on this side of the bridge.

- LIGHTS.**—On the western side of the north entrance to Euripo strait a light is shown, at an elevation of 39 feet, from a frame lighthouse, erected about 100 yards from the end of the point situated about  
10 2 cables north-north-eastward of the Quarantine establishment.

On the eastern side of the north entrance a light is shown, at an elevation of 68 feet, from a dwelling, 41 feet high, at 40 yards within Kaki Képhali point.

- Rocks.**—A patch of shoal ground, with less than 6 feet water on it,  
15 lies with its shallowest spot east-north-eastward, distant  $1\frac{3}{4}$  cables from Kaki Képhali lighthouse; shoal water under the depth of 24 feet extends  $1\frac{1}{2}$  cables farther eastward.

*Chart 1554, Talanta channel, &c.*

- A shoal, with  $4\frac{1}{4}$  fathoms water over it, lies 22° true, distant 8 cables  
20 from Kaki Képhali lighthouse, and two-thirds of a mile from the nearest point of the coast of Eubœa island. Other points of the coast northward of it, forming the anchorage, are foul half a mile off.

- [The preceding portion of this Chapter is copied from pp. 166, 167. For description of the channels southward of Khalkis, the bridge, and tidal changes, see pp.  
25 160-165.]

- TALANTA CHANNEL (EVOÏKOS),** north-west of Cape Gaidaro, is clear of danger at a short distance from the shore, which generally is steep-to on either side of the channel. The high range of the Kandili mountains in Eubœa island, which reach nearly 4,000 feet  
30 above the sea, a little within the coast, extend over a distance of 7 miles. The violent gusts of wind which descend from these mountains during north-east and northerly winds, and also the heavy squalls which may blow from the high land on the opposite side of the channel, should be carefully guarded against, in vessels under sail.

- 35 **South-west shore.**—Cape Gaidaro (*Lat. 38° 30' N., Long. 23° 33' E.*) is  $3\frac{1}{2}$  miles from the north entrance to Euripo strait. Shoal water extends for a distance of 6 cables to the northward of the cape, and in the bight on its west side is Gaidaro islet, separated from the shore by a narrow passage 9 fathoms deep. A small group of dry  
40 and sunken rocks lies with its outer edge about one-third of a mile off the north end of the islet, with 11 fathoms water between. At  $1\frac{1}{2}$  miles inland from the shore of the bight Mount Ktypa (ancient *Messapus*) rises 3,356 feet.

*General charts 1554, 426, 2836b.*

*Chart 1554, Talanta channel, &c. Var. 3° 40' W.*

**Port Scroponeri.**—At  $6\frac{2}{3}$  miles westward of Cape Gaidaro is the little islet of Gatzá, at the entrance of Port Scroponeri, an inlet running nearly 3 miles west-south-west, with a width of 6 to 10 cables, and surrounded by high land; the port does not seem to be resorted to by the natives, there is no village, and the water is deep for ordinary anchorage, being from 20 to 18 fathoms. 5

The peak over Cape Tamera, the south-eastern point of entrance, is 820 feet high, and the eastern termination of the Scroponeri and Strutzina mountains. Cape Gatzá, the north-west entrance point, is  $1\frac{1}{2}$  miles north-westward of Cape Tamera, and the water is deep on either side of Gatzá islet, which lies between, but the passage south of the islet is the wider. 10

**Port Larmes.**—This little port, the *Larymna* of the ancients, is 5 miles north-westward of Port Scroponeri; it is a narrow inlet running south-westward nearly 2 miles, having from 20 fathoms water at the entrance, to 4 fathoms near its head, where there is a stream of drinkable water and a bridge, above which is a water mill. On the north-western side of the entrance to the port is Agios Georgio, a white chapel situated on the summit of an islet about 20 feet high forming part of a rocky shoal lying a quarter of a mile from the shore. 15 20

The neck of the narrow spit about one mile northward of Cape Stavro, the south point of entrance, was one foot below water in 1916.

Within the entrance, on the western side, there are the remains of an ancient fortification of red sandstone, the blocks being rectangular, from 2 to 3 feet in length, and half that in breadth. 25

A cantilever overhead loading jetty is situated one mile westward of Cape Stavro (*Lat. 38° 34' N., Long. 23° 20' E.*), opposite the town of Larmes; two mooring buoys lie off the jetty.

Lake Topolias or Copias, whose waters discharge into this port, as well as Lakes Likiri and Paralimni, which are connected with it by canal, have been partially drained and brought under cultivation. 30

*Chart 1556, Gulf of Volo, with Oreos and Talanta channels.*

**Coast.**—Cape Larmes is  $2\frac{1}{4}$  miles north-east of the entrance to the port of the same name, whence the base of the high land trends round to the north-west to Cape Theologos, a distance of nearly  $8\frac{1}{2}$  miles, beyond which, on the west, is Cape Kerata with an old tower on it, and the eastern point of Atalánti bay. The coast between Capes Theologos and Kerata fronts the north, is  $1\frac{3}{4}$  miles in length, and immediately within it Mount Theologos rises 705 feet and is covered with trees and bushes. 35 40

Vessels rounding Cape Kerata should give it a wide berth, as a shoal extends a quarter of a mile north-north-westward from it.

*General charts 1554, 426, 2836b.*

*Chart 1556, Gulf of Volo, Oreos and Talanta channels. Var. 3° 40' W.*

- Atalánti bay.**—Cape Akritsa, a low sandy point, is 8 miles north-westward of Cape Kerata, and between the two is Atalánti bay, open to the north; the southern part of the bay (*Sinus Opuntius*) extends east and west  $4\frac{1}{2}$  miles, with from 18 to 10 fathoms water, sand and shells. On the western side of the bay are the two islands of Atalánti and Gaidaro; the latter is nearly united to the shore by low marshy land, and forms the north-west side of a bight about  $1\frac{3}{4}$  miles deep, called Port Armyro, which has from 7 to 3 fathoms water. A rock with 7 feet water upon it lies nearly in the middle of the entrance, which is about half a mile wide.

**LIGHT** (*Lat. 38° 46' N., Long. 23° 03' E.*).—A light is shown, at an elevation of 46 feet, from a circular masonry tower, 42 feet high, on the extreme of Cape Akritsa.

- Mount Khlomo**, 3,520 feet high, lies nearly 5 miles west-south-westward of Port Armyro, and  $6\frac{3}{4}$  miles northward of the mount is Xero-vuni, 2,340 feet high, and  $3\frac{3}{4}$  miles south-westward from Cape Akritsa.

- Atalánti island**, northward of Gaidaro, is more than one mile in length north and south, 410 feet high, and its southern end is only separated from the shore by a narrow passage 5 to 7 fathoms deep. The island lies at an angle with the coast, and in the bay, known as Talanta bay thus formed westward of the island, there is anchorage in from 6 to 10 fathoms, good holding ground. The best berth is about one-third of a mile westward of the small islet situated close to the centre of the western coast of Atalánti island, taking care in a heavy-draught ship to avoid the isolated patch of  $4\frac{1}{2}$  fathoms between this position and the islet; although the anchorage is open to the northward, the furious gusts of wind, which blow over the high land of Eubœa do not reach this shore.

- The skala, or landing place, of Atalánti is on the shore abreast of the island, and the town of Atalánti is  $3\frac{1}{4}$  miles inland, surrounded with gardens containing abundance of fruit and vegetables, and the whole plain is in a high state of cultivation. Many remains of ancient ruins are found in the vicinity of the bay.

**LIGHTS.**—A light is shown, at an elevation of 40 feet, from an iron support, 19 feet high, on Agios Nikolaos islet, about 2 cables westward of the north extreme of Atalánti island.

- A light is also shown from an iron candelabrum, 19 feet high, near the quay at the skala of Atalánti.

**Communication.**—Steamers running between the Piræus and Volo occasionally call here. The town of Atalánti is a telegraph station.

*General charts 426, 2836b.*

*Chart 1556, Gulf of Volo, Oreos and Talanta channels. Var. 3° 40' W.*

**Livantes.**—At  $2\frac{1}{4}$  miles north-north-westward of Atalánti island is Point Livantes, slightly salient, and on the face of the adjacent hill is the village of Livanates; at about  $1\frac{1}{4}$  miles north-west of the point the coast is skirted by rocks, some appearing above water. The whole western shore of Atalánti bay to Cape Akritsa should be given a wide berth. 5

**Vorlovu bay.**—From Cape Akritsa the coast trends westward, and at the distance of  $6\frac{1}{2}$  miles is Cape Longos; the low sandy shore between forms an inward curve, and is backed by high land. Cape Longos is low and sandy, and three-quarters of a mile south-south-eastward of it is the village of the same name. At  $3\frac{1}{2}$  miles farther west is Vromo Limni, and between is Vorlovu bay about  $1\frac{3}{4}$  miles deep, with the village of the same name on the western shore near its head. The depths in the bay are from 15 to 30 fathoms, shoal water extending in places a quarter of a mile from the shore. 10 15

Vromo Limni is a low projecting point with trees on it, and between this point and Strongyli islet, the southern of the Likhades islands, is Vromo passage (see page 233), the western entrance to the Talanta channel. 20

**LIGHTS** (*Lat. 38° 47' N., Long. 22° 51' E.*).—A light is shown, at an elevation of 19 feet, from a white iron beacon tower with a red band, situated on Vromo Limni point.

A light is also shown on Strongyli islet. See page 233.

*Chart 1554, Talanta channel, &c.*

**The North-east shore** of Talanta channel is steep to and without danger beyond a quarter of a mile from the shore. 25

**Cape Mnima** is situated on the coast of Eubœa, nearly 4 miles northward of Cape Gaidaro, and about  $7\frac{1}{4}$  miles from Khalkis town.

**LIGHT.**—A light is shown at an elevation of 20 feet, from a white iron beacon tower on masonry base, 10 feet high, on the extremity of Capé Mnima. 30

The monastery of Ágios Nikolos Galatas, consisting of large white buildings, situated about 11 miles north-westward of Cape Mnima, is conspicuous when bearing between 4° and 49° true, but is hidden by trees outside these bearings. 35

*Chart 1556, Gulf of Volo, Oreos and Talanta channels.*

**Limni.**—At  $14\frac{1}{2}$  miles north-westward of Cape Mnima, and midway between Khalkis and Ædipsos gulf, on the north-east side of Talanta channel, is the town of Limni, situated in a small bay with very deep water. 40

**Landmark.**—A factory, with conspicuous chimney, stands near the coast, about 2 miles south-eastward of Limni light. Steamers of

*General charts 426, 2836b.*

*Chart 1556, Gulf of Volo, Oreos and Talanta channels.* Var.  $3^{\circ} 40' W$ . considerable size lie off the factory and load, with two anchors down and the stern hauled in to the shore.

**LIGHT** (*Lat.*  $38^{\circ} 46' N.$ , *Long.*  $23^{\circ} 20' E.$ ).—A light is shown, at  
5 an elevation of 87 feet, from a metal post, 26 feet high, on the west point of Limni bay.

**Mooring buoy.**—A red mooring buoy is established, in a depth of 43 fathoms,  $1\frac{1}{2}$  cables from the landing place at Limni.

**Communication.**—Steamers plying between Piræus and Volo  
10 call here.

Limni is a telegraph station.

**Cape Therma**, about  $13\frac{1}{2}$  miles west-north-westward of Limni and so called from hot springs near it, is the eastern entrance point of Ædipsos gulf, and at 3 miles east-north-eastward of it is Mount  
15 Balanti (ancient *Telethrium*), 2,890 feet high. The heat of the sulphur springs is at the boiling point.

**Light.**—A light is shown on the east side of Cape Therma during the summer months only.

**GIALTRA BAY.**—On the northern side of Talanta channel  
20 and about 8 miles from the western end of Eubœa island, and westward of Cape Therma, is Ædipsos gulf, an indentation about 2 miles square, its narrow continuation westward being known as Gialtra bay. This bay is the only sheltered anchorage on the coast of Eubœa island, between Khalkis town and the Likhades islands, but the water in the  
25 central part is rather deep, 17 to 20 fathoms, and no supplies can be procured.

**Communication.**—Steamers running between Piræus and Volo call here in summer. The village of Ædipsos is situated near the eastern shore of the gulf of that name, and is a telegraph station.

**LIKHADES ISLANDS.**—The passage between Likhades  
30 point (the western extreme of Eubœa island) and the mainland on the south is much contracted by a cluster of islets, rocks, and shoals, which extend  $1\frac{1}{10}$  miles southward and a little farther south-westward of Likhades point, and are named Likhades islands.

**Megalo Likhades**, the largest and most northern of the group, is 7 cables in length north-west and south-east, with traces of extensive ruins on it, and surrounded by sunken rocks\* and shoal water. The islet is about one-third of a mile from Likhades point, and a narrow passage between the shoals on either side carries 4 and 5 fathoms water,  
40 but the tides run through with great rapidity and change in a similar manner to those of Euripo strait, consequently this channel is only fit for boats or country vessels with local knowledge.

*General charts 426, 2836b.*

*Chart 1556, Gulf of Volo, Oreos and Talanta channels. Var. 3° 50' W.*

**Rat isles** consist of about 15 small islets and rocks, extending over a distance of little more than a third of a mile, and lying on the reef continuing from the southern portion of Megalo Likhades; they are surrounded by shoal water, and a spit with  $2\frac{1}{2}$  fathoms on it projects 4 cables west-south-westward from the southern islet. 5

All the above dangers are covered by *red* sectors of light from Vromo Limni and Strongyli islet; Cape Vasilina light, showing *white*, leads westward.

**Strongyli (Stroggyli) islet**, the southern of the Likhades group, is a small round islet about 104 feet high, on which is a white stone lighthouse; a sandy spit projects from it a little more than a cable to the northward, leaving between it and the 5-fathoms line round Rat isles a clear space about  $1\frac{1}{4}$  cables wide, and  $6\frac{1}{2}$  fathoms deep, named Strongyli passage. 10 15

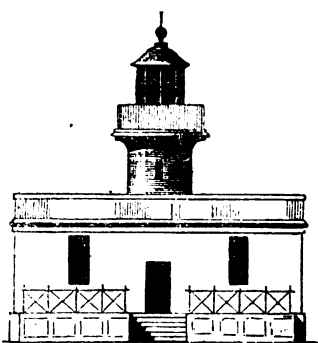
**LIGHT** (*Lat. 38° 49' N., Long. 22° 50' E.*).

—A light is shown, at an elevation of 134 feet, from a white stone tower on a dwelling, 30 feet in height, situated on Strongyli islet.

A light is also shown from Vromo Limni, opposite. See page 231.

**A shoal**, with 3 fathoms on it and 15 fathoms between it and the islet, lies  $1\frac{1}{2}$  cables eastward of Strongyli.

**Research rock**, with  $3\frac{1}{2}$  fathoms on it, and steep-to, lies  $6\frac{1}{2}$  cables  $110^\circ$  true, from Strongyli lighthouse. It is also nearly a mile north-eastward of Vromo Limni, the southern entrance point of Talanta channel; it is covered by *red* sectors of light from Vromo Limni and Strongyli. 20 25 30



Strongyli islet lighthouse.

**Vromo passage**, the channel between Strongyli and Vromo Limni, is the western entrance to the Talanta channel, is one mile wide, and, with the exception of Research rock, is deep and clear.

**Tides**.—It is high water, full and change, in Vromo passage at IXh. 30m.; springs rise  $2\frac{1}{2}$  feet, neaps  $1\frac{3}{4}$  feet. 35

**Tidal streams**.—The east-going stream commences to run into Talanta channel at about 3 hours after low water by the shore, and the west-going stream to run out 3 hours after high water, but both streams are much affected by the winds. The velocity of the streams under ordinary conditions is about  $1\frac{1}{2}$  knots per hour. 40

**GULF of ZEITUN or STYLIDA (MALIAKOS (Lamia) GULF)**.—This gulf extends westward 14 miles from the

*General chart 2836b.*

*Chart 1556, Gulf of Volo, Oreos and Talanta channels. Var. 3° 50' W.* western end of Eubœa, but the gulf proper, from the points of entrance to its head, is limited to about 8 miles. The points of entrance, Cape Kiliomeli the southern, and Cape Ekinos the northern, are nearly  $1\frac{1}{2}$  miles apart, low and steep-to. Half-way to the head the gulf is  $2\frac{3}{4}$  miles wide between the shoal water on either side. Its southern shore and head are irregular, with shallow bights, some of which are a mile deep. The River Ellada runs into the sea through a large extent of low swampy ground at the bases of Mounts Suvalla and Alaphi, 4,140 and 3,560 feet high respectively. The low south shore is reported to be extending to the northward.

**LIGHT** (*Lat. 38° 51' N., Long. 22° 43' E.*).

—A light is shown, at an elevation of 31 feet, from a circular iron tower, 26 feet high, erected 87 yards south-westward of the sandy extreme of Cape Kiliomeli.



(Cape Kiliomeli lighthouse.)

**Stylida.**—The town of Stylida stands at the head of a shallow bight on the north shore, and the village of Agia Marina on the same shore is  $1\frac{3}{4}$  miles south-westward of it. ♦An iron pier, on which are steam cranes, extends 460 feet from Agia Marina.

The port of Stylida, to which a channel has been dredged to a depth of 16 feet, is easy of access for vessels drawing less than that amount of water.

**Light.**—A light is shown on the quay at Stylida.

**Buoys and beacons.**—The entrance to the channel is marked by two light-buoys, showing a *green fixed* light on the starboard side and a *red fixed* light on the port, and the edge of the shallow water in the port is marked by four beacons on stakes. Ships entering should be in the *white* sector of the light on the quay to pass between the two light-buoys at the entrance to the channel.

**Communication.**—Stylida and Agia Marina are both connected by a short railway with Zeitun (ancient *Lamia*), situated 8 miles westward of Stylida. Steamers running between Piræus and Volo call daily at Stylida. It is also a telegraph station.

**Anchorage.**—There is anchorage in from 10 to 15 fathoms all over the gulf, but the usual anchorage is off the village of Agia Marina. Vessels should keep as far over on the northern shore as possible, as the winds which blow along the base of the chain of mountains on the north are not so likely to be charged with miasma as the night air in the southern part of the gulf. The nearest anchorage to the Pass of Thermopylæ is off Agia Triada, on the south shore; the bottom is soft mud, but very tenacious.

*General chart 2836b.*

*Chart 1556, Gulf of Volo, Oreos and Talanta channels. Var. 3° 50' W.*

**OREOS CHANNEL.**—This channel, leading to and from the Gulf of Zeitun and the Talanta channel, is bounded on the north-west by the mainland, and on the south-east by the north-western coast of Eubœa, and takes its name from the district of Oreos in that island. 5  
It runs in a general west-south-west and east-north-east direction for about 18 miles, and is  $1\frac{1}{4}$  miles wide at its narrowest part, near the west end.

**Tidal stream.**—A tidal stream sets through Oreos channel  $1\frac{1}{2}$  miles an hour, and at the same rate in and out of the Gulf of 10  
Zeitun.

**Northern coast.**—**Cape Drepano** (*Lat. 38° 52' N., Long. 22° 47' E.*), on the main or north coast, is nearly 3 miles eastward of the entrance to the Gulf of Zeitun, and is a low sandy tongue, steep-to. The shore eastward, nearly to Cape Spilia, is also low and 15  
sandy; this latter cape is  $1\frac{1}{4}$  miles northward of Cape Vasilina, on the north coast of Eubœa (*see page 236*), and the two form the narrowest part of Oreos channel.

**Gardiki bay**, between Cape Spilia and the spur of an elevated ridge on the east, is nearly  $1\frac{1}{2}$  miles deep, with anchorage in 14 to 20  
18 fathoms at its head; the eastern shore is bordered by a shallow bank, close to which the water is deep. The land in the vicinity is well cultivated, two or three streams disembogue, and the village of Gardiki stands on a hill  $1\frac{1}{2}$  miles within.

**Telegraph.**—The village of Gardiki is a telegraph station. 25

**Agios Nikolaos islet**, with a chapel on it, lies about  $2\frac{1}{2}$  miles eastward of Gardiki bay, at the foot of Mount Elias on the mainland. A bank extends from it to the north, and between it and the bank bordering the shore is a narrow passage with 17 fathoms water.

**Port Vathi.**—At about half a mile northward of A. Nikolaos 30  
islet is a small circular inlet, almost land-locked, with 8 to 22 fathoms water, named Port Vathi; the entrance is shoal on either side. North-eastward of Port Vathi is the bay and village of Glypha.

**Cape Agios Sostis**,  $2\frac{1}{2}$  miles east-north-eastward of A. Nikolaos islet, and the eastern extreme of Glypha bay, is a projecting point 35  
with a narrow bank extending from it which borders the shore northward; the eastern side of the cape consists of white cliffs.

**Argiro-nisi**, an island 5 miles north-eastward of Cape Agios Sostis, is about three-quarters of a mile in length east and west; a large rock lies off its southern extreme, and shallow water extends one 40  
cable beyond it, with 35 fathoms close to the edge of the bank. The island is nearly connected to a narrow projecting point of the coast by

*General charts 1085, 2836b.*



*Chart 1556, Gulf of Volo, Oreos and Talanta channels. Var. 3° 40' W.*  
 a rocky ridge, on which is a small islet; the ridge is steep to on either side, but on it there are rocks with less than 6 feet of water over them between the island and islet; it is no passage for a ship. Argiro-nisi is about  $1\frac{3}{4}$  miles southward of Cape Stavros (page 246), the north-western point of the entrance to Oreos channel, and the southern point of the entrance to the Gulf of Volo.

**LIGHT** (*Lat. 39° 01' N., Long. 23° 06' E.*).—A light is shown, at an elevation of 114 feet, from a cylindrical masonry tower with dwelling attached, 21 feet high, erected on the eastern extreme of Argiro-nisi.

**Southern coast.**—The bank bordering Likhades point, the western extreme of Eubœa, continues along the coast northward, and at  $1\frac{1}{4}$  miles northward of the point rocks are reported to extend off nearly half a mile, and are covered by a *green* sector of light from Cape Vasilina.

**Cape Vasilina** (*Lat. 38° 52' N., Long. 22° 52' E.*).—From the reef just mentioned the coast trends a little more easterly  $1\frac{3}{4}$  miles to Cape Vasilina, which, with Cape Spilia on the mainland, contracts the channel to a width of  $1\frac{1}{4}$  miles. The cape is low and sandy, like the coast between it and Likhades point.

At  $1\frac{1}{2}$  miles east-south-eastward of Cape Vasilina, Mount Elias rises to a height of 2,200 feet from the cliffs at its base, from about three-quarters of a mile to one mile eastward of the cape. The sandy shore, which is a little salient between the cliffs, is bordered by shoal water.



Cape Vasilina lighthouse.

**LIGHT.**—A light is shown, at an elevation of 33 feet, from a square masonry tower, with dwelling attached, 26 feet high, situated 77 yards southward of the extreme of Cape Vasilina.

**Reef.**—At 8 miles east-north-eastward of Cape Vasilina is a low swampy point, from which a reef extends off about 2 cables, and parts of it are a very little under water. To avoid it keep the western point of Skiathos open of Cape Kephala, the extreme of the low land of Eubœa.

**OREOS BAY**,  $2\frac{1}{2}$  miles further to the north-eastward, and about  $3\frac{1}{4}$  miles southward of Argiro-nisi, mentioned above, affords fair anchorage in 16 or 17 fathoms, sandy bottom; the best berth is half a mile from the shore on each side of the bay, north-westward of the skala, off the ruins of Oreos, which are on a hummock, rising suddenly from

*Chart 1556, Gulf of Volo, Oreos and Talanta channels. Var.  $3^{\circ} 40' W$ .*  
the plain. There is also anchorage about 2 cables westward of the skala  
in about 10 fathoms, or as convenient. On the west side of the bay is  
a little islet with the ruins of a turret on it, and north-westward of the  
islet are rocks above and below water, with deep water near them. In 5  
1896 the inhabitants of the present village of Oreos numbered 692.

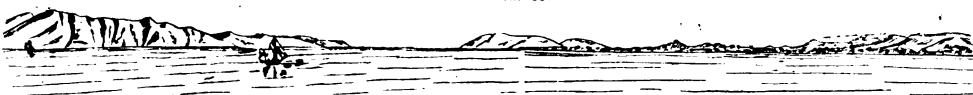
The pretty and prosperous little town of Xero Khori is situated in  
a fertile plain, about  $1\frac{1}{2}$  hours' journey eastward of the skala, and  
contained in 1896 a population of 3,464.

**Oreos shoal** (*Lat.  $38^{\circ} 57' N.$ , Long.  $23^{\circ} 04' E.$* ).—This danger, 10  
the centre of which lies  $7\frac{1}{2}$  cables  $333^{\circ}$  true from the islet on the west  
side of Oreos bay, is one-third of a mile in length north and south,  
with two rocky heads having less than 6 feet water on them, and  
3 fathoms between. The shoal is steep-to, and may generally be recog-  
nised by the discoloured water; it is marked by a light-beacon. See 15  
below.

A clump of trees on the plain north-eastward of Oreos, in line with  
the foot of Asmeni ridge,  $67^{\circ}$  true, leads northward of the shoal; when  
coming from the north-eastward the shoal will be left to the eastward  
by keeping the western extreme of Skiathos well open of Cape Kephala, 20  
the latter bearing  $55^{\circ}$  true until the town of Trikiri is shut in with  
the high land of Cape Stavros.

**Directions.**—To avoid the above dangers at night, keep on the  
north-western side of the channel by means of bearings of the lights  
at the ends of the channel and on Oreos shoal. 25

*Skiathos.*



*Mt. Trikiri.*

*C. Kephala.*

*Oreos Bay.*

Western extreme of Skiathos well open of Cape Kephala.  
View from the westward of Oreos shoal.

**LIGHTS.**—A light is shown, at an elevation of 21 feet, from a  
white pyramidal structure, with a red band on column, with balcony,  
erected on the centre of Oreos shoal.

A light is shown, at an elevation of 24 feet, from a post 19 feet high  
on the end of the pier at the skala below Oreos. 30

**Communication.**—Steamers running between the Piræus and  
Volo call at Oreos bay occasionally. The town of Xero Khori, just  
alluded to, is a telegraph station.

For **Trikiri** and **Volo** channels, see page 246.

*Chart 1820, Andros island and Doro channel.* 35

**NORTH-EAST COAST of EUBŒA.**—From Cape Doro  
(*Lat.  $38^{\circ} 09' N.$ , Long.  $24^{\circ} 36' E.$* ), at the south-eastern end of Eubœa

*General charts 1597, 2836b.*

*Chart 1820, Andros island and Doro channel. Var. 3° 20' W.*

(see page 167), the north-east coast of that island trends in a west and then north direction, and consists principally of high precipitous rocks without even shelter for the smallest description of  
 5 boats, nor scarcely a place where a boat can land. The castle of Philagra, apparently a Venetian fortification, is above Cape Philagra, about 9 miles from Cape Doro. See view opposite.

*Chart 1597, Petali gulf, &c.*

**Port Petries** is a little bight forming the north shore of an indentation nearly 2 miles long north and south, by  $1\frac{1}{4}$  miles in breadth, and is situated 17 miles north-westward of Cape Philagra. The port affords shelter from north-easterly winds, and anchorage for small vessels within about 2 cables of the shore, in 10 or 11 fathoms water, sandy bottom. It would appear, from the growth of herbs and strong  
 15 brushwood close to the shore, that southerly winds, which generally blow hard in the winter season, do not come home in this little port. A road from here leads across to Aliveri bay, Evripos channel. See  
 • view opposite.

*Chart 426, Doro channel to Gulf of Saloniki.*

**Cape Octonia**,  $7\frac{1}{2}$  miles beyond Port Petries, is the eastern termination of Mount Octonia, which, at  $2\frac{1}{2}$  miles inland, is 2,380 feet high; the cape is a projecting point, and forms the south-eastern extreme of Kumi bay. Half a mile southward of Cape Octonia are two large rocks or little islets, the outer of which is known as Karvuno  
 25 islet; sunken rocks surround the islet, and shoal water extends more than half a mile from the Eubœa coast.

*Plan of Port Kumi on chart 426.*

**Kumi bay** is formed between Cape Octonia and Cape Kumi, 8 miles to the north-north-westward, receding from the line of these  
 30 capes nearly 3 miles; vessels are sometimes built here, the pine forests of Mount Delphi being near. See view opposite.

**Harbour** (Lat.  $38^{\circ} 38' N.$ , Long.  $24^{\circ} 08' E.$ ).—A harbour for small craft is formed by two breakwaters, the southern of which extends 400 yards at right angles to the shore; the northern one is about 900  
 35 yards long, the outer end overlapping the southern breakwater, leaving a narrow but apparently deep entrance between them; the depths within are from 2 to  $4\frac{1}{2}$  fathoms, the lesser depth in the western half of the harbour. In the year 1899, 19 small sailing vessels were counted in the harbour.

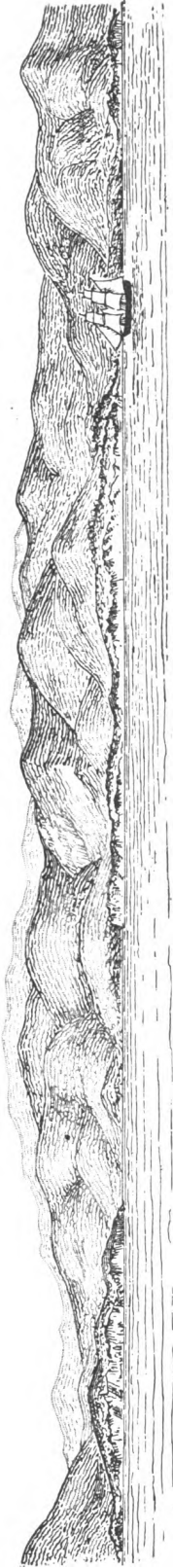
40 Large vessels anchor temporarily in 10 or 12 fathoms, about 4 cables eastward of the harbour.

**LIGHT.**—A light is shown, at an elevation of 28 feet, from a metal shed on the head of the northern breakwater.

*General charts 1597, 426, 2836b.*



Cape Doro to Cape Kumi.



Port Petries.



Kumi Bay.



*Plan of Port Kumi on chart 426. Var. 3° 20' W.*

**Kumi town** is situated about a mile from the harbour. The population, amounting to 4,840 in 1896, are chiefly seafaring, though a considerable trade is done in oil, wine, and lignite.

**Communication.**—The steamer from Piræus and Lavrion to Skyros calls here once a week. The town of Kumi is also a telegraph station. 5

*Chart 426, Doro channel to the Gulf of Saloniki.*

**Glaro islet.**—The bank bordering the coast within the 100-fathoms line extends from the shore of Kumi bay, about 4 miles, and has from 68 to 15 fathoms water on it; near its edge, and 5 miles 353° true from Cape Octonia, is the little islet of Glaro. 10

**Prassudo (Prassuda) islet.**—At  $3\frac{1}{2}$  miles north-north-eastward of Glaro, and  $4\frac{1}{4}$  miles from Cape Kumi, is the islet of Prassudo, 80 feet above the sea, flat, with high cliffs, lying on the southern end of a bank with from 33 to 95 fathoms on it, with 12 to 25 fathoms close around the islet. The islet and lighthouse are important marks for this part of the coast of Eubæa. 15

**LIGHT.**—A light is shown, at an elevation of 138 feet, from a circular masonry tower with dwelling attached, 57 feet high, erected on the summit of Prassudo islet. 20

**Current.**—To the north-westward of Prassudo, in September, 1916, the current was observed to set east at the rate of one knot, with a strong north wind, and at 15 miles east-south-eastward of the islet it set south-eastward  $1\frac{1}{4}$  knots, with a gentle breeze from N.W. 25

*Charts 1554, 426.*

**Islets.**—From Cape Kumi the coast takes a westerly direction, and at the distance of 23 miles is Cape Sarakeniko (*Lat. 38° 46' N., Long. 23° 43' E.*). A little westward of Cape Kumi are the islets of Plati and Kili; about 10 miles farther west is the islet of Kheliatho, 190 feet high, and a little over a mile beyond it is Tria nisia. All these little islets are close to the shore, and the water is all along deep. 30

*Chart 426, Doro channel to Gulf of Saloniki.*

**Coast.**—At 3 miles westward of Cape Sarakeniko is a small sandy bight, and in its vicinity is a little village; about 6 miles farther on is Port Mantudion, another small bight with a village near it; these little bights are frequently visited by small coasting vessels, which are always hauled up on the beach. Although quite open to the north-east, vessels occasionally take in cargoes of manganese at Port Mantudion. 35

**Telegraph.**—The village of Mantudion, situated about 2 miles westward of the port of that name, is a telegraph station. 40

*General charts 426, 2836b.*

*Chart 1556, Gulf of Volo, &c. Var. 3° 30' W.*

P. Pelaki, about 3 miles west-north-westward of Port Mantudion, is a good watering place. The coast here forms a shallow bight three-quarters of a mile across, the river flowing into the sea on the south side and a salt stream on the north, the shore between them being low and sandy. At the south-east end of the bight, where the land is higher, are the ruins of Cerinthus. There is anchorage in from 12 to 20 fathoms at about 6 cables from the two points forming the bight.

**Cape Agios Vasileos**, 3 miles northward of P. Pelaki, appears like a rocky island, joined to the mainland by a narrow isthmus of sand; it is steep-to. A white cottage stands about 2 cables to the west of the extreme of the cape, but the Hellenic fort, shown on the chart, is not visible from the sea. There is anchorage in the bight on the south side, in 12 fathoms, about 2 cables from the shore, with the eastern extreme of the cape bearing 42° true, distant 5 cables. Abreast the anchorage, where the beach joins the cliff, there is a white house, and about a cable to the southward are two ruined cottages.

The flat strip of coast to the southward is well cultivated.

**Lephko islets**, the inner of which is 130 feet high, form a cluster of small islets and rocks on a bank extending 1½ miles from the shore; they lie 4½ miles northward from Cape Agios Vasileos, and form a salient point of the coast.

*See view at page 246.*

**Pondiko (Pontiko) nisi** is about 7½ miles north-westward from Lephko islets, and half-way between are Myrmikonisos rocks, one of which is above water. These rocks are about a quarter of a mile in extent, steep-to, and the inner rock is about two-thirds of a mile from the shore, with 35 fathoms water midway between. Pondiko nisi is 6 cables in length east and west, 230 feet high, and lies about 6 cables north-eastward from Cape Artemision, the northern extreme of Eubœa, and on the southern side of entrance to Trikiri channel (*see* page 246). Between Pondiko nisi and Cape Artemision there are from 10 to 40 fathoms water, and a short distance south-eastward of the island is the smaller islet of Praso nisi.



Pondiko nisi light-house.

**LIGHT** (*Lat. 39° 03' N., Long. 23° 21' E.*).—A light is shown, at an elevation of 203 feet above the sea, from a circular masonry tower, with dwelling attached, 62 feet high, situated on the north extreme of Pondiko nisi.

**Mount Psara**, 1,320 feet high, rises over this end of Eubœa, at about 3 miles southward of Cape Artemision, whence the coast to the

*General charts 126, 2836b.*

*Chart 1556, Gulf of Volo, &c. Var.  $3^{\circ} 20'$  W.*

low Cape Kephala has no off-lying danger, and the distance is about 9 miles. *See page 237.*

*Chart 426, Doro channel to Gulf of Saloniki.*

**CURRENT.**—When navigating the north-east coast of Eubœa or Euripo great attention should be given to the probable set of the current, more especially during north-easterly winds. In the great bight between Capes Doro and Octonia the almost unbroken line of precipitous coast is exposed to the full force of the strong north-easterly winds, which send in a heavy sea and also accelerate the south-westerly current from the Dardanelles.

From abreast of Cape Octonia to about the middle of the bight a current of  $1\frac{1}{4}$  miles an hour to the south-south-westward has been experienced, and thence to near Cape Doro an increased rate of 2 knots in the same direction, and being deflected to the southward and eastward, it at times sweeps round Cape Doro (*Lat.  $38^{\circ} 09'$  N., Long.  $24^{\circ} 36'$  E.*) at the rate of 3 knots. *See page 169.*

*Chart 2048, Skyros island.*

**SKYROS ISLAND** (pronounced Skiros) is the chief of the northern Sporades, or islands lying north-eastward of Eubœa. The population in 1896 amounted to 3,512. It is  $15\frac{1}{2}$  miles in length in a north-westerly and south-easterly direction, irregular in form, varying from less than 2 to  $6\frac{1}{2}$  miles in breadth, and its greatest elevation, Mount Kokhilas, in the southern part, is 2,565 feet high. The southern part of the island is uncultivated; the high mountains are intersected by deep gullies, and are rugged, except towards the summits, where they are clothed with oaks, firs, and beeches.

The northern part, though mountainous, is of less elevation. The vine and corn grow on the hills; oaks, planes, and fruit trees in the valleys. Corn, figs, and the vine flourish on the plains, one of which is about 4 miles in extent. The wheat of Skyros is equal to the best in the archipelago; wine, corn, wax, honey, oranges, lemons, and madder are exported in large quantities. The island is well watered, and affords pasture to a few oxen and numerous sheep and goats, many of which are exported. Skyros, the chief town, is on the north-east side of the island; the houses are flat-roofed, and generally of two stories, of which the lower one is built of stone and the upper of wood.

**Communication.**—In addition to the telegraph, there is regular steamboat communication with Piræus, Volo, and other ports.

**Lithari point** is the south-eastern extreme of Skyros island; rocks, one of which is above water, lie about  $1\frac{1}{4}$  cables off the point and are steep-to.

*General charts 426, 2836b.*



*Chart 2048, Skyros island. Var. 3° 10' W.*

**LIGHT** (*Lat. 38° 47' N., Long. 24° 41' E.*).

—A light is shown, at an elevation of 279 feet, from an octagonal tower, with dwelling attached, 36 feet high, situated on Lithari point.

**PORT TREBUKI (TRISTOMON)**, about  $4\frac{1}{4}$  miles westward of Lithari point, is a bay about  $1\frac{1}{2}$  miles wide, and nearly the same deep, with from 25 to 42 fathoms water in the central part, but with anchoring depths along the northern and eastern shores.

**Channels.**—At the entrance are the two islands of Plati and Sarakino, the latter being much the larger. They form three passages into the port; the western is named Marmora channel, the middle Piato channel, and the eastern Sarakino strait. These passages carry deep water in mid-channel; Marmora channel is the best. In taking Piato channel, keep the eastern shore aboard, as shoal water extends for one cable from the eastern and south-eastern sides of Plati island.

The port is considered an excellent place of shelter, when vessels bound through the archipelago are caught in a gale of wind. The wind, however, comes down from the mountains in very heavy gusts, consequently it is advisable to ride with both anchors down.

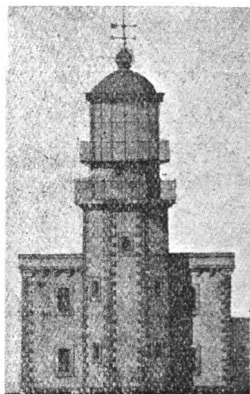
For additional information, *see* Appendix V., page 508.

**KALAMITZA BAY.**—This extensive bay, 3 miles north-westward of Port Trebuki, is separated from it by a hilly peninsula, which terminates on the south in Marmora point, and on the north-west in Cape Nikolo; off the latter cape are the Diavati islets, of a reddish colour (*see* view on chart 2048). Kalamitza bay is protected on the west by Valaxa island,  $2\frac{1}{2}$  miles in length and 670 feet high. The entrance between Latomeio point, the south end of Valaxa, and Exo Diavati and Diavati islets on the south-east, is one mile wide. The islets should not be approached too closely.

*See* view opposite.

**LIGHTS.**—A light is shown at an elevation of 59 feet, from a white iron tower, with a red band, situated on Latomeio point, the south extreme of Valaxa island.

A light is shown at an elevation of 66 feet, from an iron column, painted blue, with masonry base, 25 feet high, erected on the eastern shore of Linaria cove, at a distance of  $5\frac{1}{2}$  cables north-westward of Psarina point, the dividing point between the cove and Arazo road. The light-column is difficult to distinguish in the daytime until quite close.



Lithari point lighthouse.

*General charts 426, 2836b.*

*Valaza island.*



*Akhiti isthmus.*

*Ero Diavati.*

*Linaria.*

*Mt. Agios Elias.*

*Diavati.*

*Kalamitza bay.*

*C. Nikolo,  
bearing 40° true,  
about one mile.*



*Chart 2048, Skyros island. Var. 3° 10' W.*

**Arazo road.**—At the head of the bay is a valley which separates the mountainous land on the north-west from that on the south-east, and gives to the island, at a distance, the appearance of being divided into two parts. In front of the valley is a semi-circular bay with a white sandy beach, affording anchorage in from 19 to 10 fathoms water, mud, gravel, and weed, good holding ground, and named Arazo road. The water, unless pretty close in, is deep, and the bottom steep, and during strong northerly winds, which prevail in summer, care should be taken not to start the anchor.

**Linaria cove** (*Lat. 38° 51' N., Long. 24° 32' E.*), to the westward of Arazo road, also affords good anchorage, and is better protected than that road, but the water is rather deep. A *green* sector of light is shown over the inner part of the cove from the light-column on the eastern shore.

A small cove on the east side of Linaria cove affords excellent shelter for small craft; the light-column is near its south entrance point. Here there are only a few fishermen, principally engaged in the lobster fishery.

**Landmarks.**—A white tower on the east side of Linaria cove, about one-third of a mile northward of the light-column, is conspicuous, and just above the latter is a white house. *See Lights.*

**Anchorage.**—A vessel anchored in Linaria cove in 25 fathoms, with Mount Klari bearing 49° true, and rode out a very heavy north-north-easterly gale in comfort, with 6 shackles of cable out.

There are narrow passages midway between Exo-Diavati and Diavati islets, and also between the north end of Valaxa island and the tongue of land projecting from Skyros, which may be used by small vessels. Of this latter passage, Commander Napier, of H.M.S. *Torch*, in 1874, writes:—"The *Torch*, drawing 12 feet 3 inches of water, passed through between Valaxa island and Skyros, but it is not at all prudent to use this passage, even by vessels of 12 feet draught. I do not consider it to be more than 100 yards wide at most, tortuous, and the navigation difficult; we had but an inch or two to spare while going through."

**Stinangali (Pephko) bay**, north of Valaxa island, is principally used for loading marble. On the north side of the entrance is Buves islet, and it is further protected by Skyrópulon and Erinia. There is a small pier to which vessels secure with anchors to seaward, but as the bottom is rocky, and a ground swell frequently runs into the bay, great care must be exercised; and in the event of a westerly wind setting in it is necessary to go to sea.

**Skyrópulon.**—This island, 5 miles westward of Valaxa, is  $1\frac{1}{4}$  miles in diameter, and 617 feet high; its eastern side is bordered by

*General charts 426, 2836b.*

*Chart 2048, Skyros island. Var. 3° 10' W.*

a reef, which extends off nearly 3 cables, on the north-east extremity of which is a large rock; a rock also shows above water one-third of a mile south-west of it. Midway between Skyrópulon and Valaxa island is Erinia islet, narrow, but one mile in length, north and south; the middle of its western side is bordered by shoal water, and its south end is foul a short distance off, and should not be rounded too near.

**Erinia rocks** consist of three patches with 5, 6, and 8 fathoms water on them respectively, the 5 and 8-fathoms patches lying  $1\frac{1}{10}$  miles and the 6-fathoms patch  $1\frac{8}{10}$  miles south-westward of the south end of Erinia islet. All three rocks lie southward of a line joining the south extremes of Skyrópulon and Valaxa islands.

**Clearing marks.**—The little islet of Buves ( $1\frac{1}{2}$  miles north-west of Valaxa) shut in with the south end of Erinia islet, bearing  $57^\circ$  true, leads north-west of the rocks; and Diavati islet,  $87^\circ$  true, well open of the south end of Valaxa island, leads southward of them.

**Caution.**—Although the least known depth on these patches is 5 fathoms, it would be well to avoid them in a large ship.

**Coast.**—Mount Oros, 1,050 feet high, rises over Cape Oros, the western extreme of Skyros; the cape is steep-to, and the 100-fathoms line of soundings passes within one-third of a mile of it. Between the cape and Stinangali bay are Oros and Agios Phokas bays, open to the south-west and south, with deep water, except close in, where small craft occasionally seek shelter from northerly winds. The island of Kuluri lies on the south side of the cape, and four little islets front the bays. At the head of Agios Phokas bay, on the east side, are ruins and a well.

Between Cape Oros and Kartsimon point, the northern point of Skyros, the coast is irregular, and off it are two or three small islets or rocks, but no danger at the distance of half a mile.

**Kartsimon point** (*Lat.  $38^\circ 59'$  N., Long.  $24^\circ 29'$  E.*).—The northern end of Skyros terminates in Kartsimon point, a sharp rocky projection surrounded by a reef and shoal water extending northward half a mile, and off it are several large and small rocks, above and below water.

**South Podia rocks.**—Northward of the reef just mentioned, and separated from it by a narrow deep passage, is a chain of rocks covered and uncovered, extending one mile northward, and on its northern end is an islet one-third of a mile in length; this group is named South Podia rocks.

**North Podia rocks** lie on a shoal two-thirds of a mile in length north and south; they consist of a narrow islet one-third of a mile long, with rocks at each end. The channel between North and South Podia

*General charts 2072, 426, 2836b.*

*Chart 2048, Skyros island. Var. 3° 10' W.*

rocks is a little more than half a mile wide, and midway from 17 to 21 fathoms deep; shoal water extends from the rocks on either side. The outer end of the North Podia rocks is  $2\frac{3}{4}$  miles  $341^\circ$  true from Kartsimon point.

5

**Vrykolakonisia rocks.**—From Kartsimon point, the north-east coast of Skyros trends south-eastward  $5\frac{1}{2}$  miles to Pureia point, and is skirted by rocks extending in places a quarter of a mile, and near Pureia point half a mile, off-shore. Pureia point is low, with two wind-mills on it, and surrounded by a cluster of large rocks named Vrykola-  
konisia, with shallow water extending eastward nearly  $1\frac{1}{4}$  miles, and to the southward the same distance.

10

**Vrykolakonisia spit** is a rocky bank, from 5 to 2 cables in width on its outer half, with from 6 to 9 fathoms water over it, extending  $96^\circ$  true 3 miles from Pureia point.

15

**Skyros town**, about a mile to the south-westward of Pureia point, consists of an ancient and a modern town; the former, in ruins, is on the summit of a conspicuous crag-like hill, the latter at the foot of the same hill half a mile to the northward of the ancient town.

**Dimitrius rock** (*Lat.  $58^\circ 55' N.$ , Long.  $24^\circ 35' E.$* ).—A shoal, about a quarter of a mile in extent, north and south, lies two-thirds of a mile from the shore fronting the town of Skyros. In the centre of the shoal is a rocky head named Dimitrius, with 3 feet on it, bearing  $175^\circ$  true  $1\frac{2}{10}$  miles from Pureia point; elsewhere on the shoal there are  $2\frac{1}{2}$  to 4 fathoms. Between the shoal and the town there are from  
5 to 8 fathoms.

20

25

**Anchorage.**—In 1904, anchorage was found in 12 fathoms to the south-eastward of the modern town, with the outer Vrykolakonisia rock bearing  $6^\circ$  true. The town is not easily recognised at night, as it is not lighted.

30

**Coast.**—Southward of the town of Skyros is a small bay called Port Akhili, and hence to Arazo road, on the south-west side, is the narrowest part of the island, the distance across being only  $1\frac{3}{4}$  miles. The coast from Port Akhili to Lithari point, the south-eastern extreme of Skyros, is composed of irregular steep cliffs, with deep water all along. Mount Kokhilas, 2,565 feet high, is situated  $1\frac{1}{2}$  miles from the coast.

35

**Lithari point and light.** See pages 241, 242.

**Currents.**—In September, 1916, between a position 15 miles eastward of Skyros and Cape Doro, no current was experienced with a light south-south-west wind; in October the current there set south-south-westward three-quarters of a knot, with a fresh breeze from north, and in November, between 15 miles east of Skyros and north-eastward

40

*General charts 2072, 426, 2836b.*

*Chart 2048, Skyros island. Var. 3° 40' W.*

of Andros, it set south-south-east three-quarters of a knot, with a gentle breeze from north-north-west. In October, between Skyros and Cape Doro, it set south-east one knot, with a fresh breeze from north-north-west.

*Chart 1556, Gulf of Volo, &c.*

**TRIKIRI CHANNEL.**—This channel, between the northern end of Eubœa on the south, and the mainland on the north, leads to the Gulf of Volo and Oreos channel. (*See* page 235.) It is  $5\frac{1}{2}$  miles wide at the entrance between Pondiko nisi and the Magnesian promontory, narrows within to  $4\frac{1}{2}$  miles, and runs westward rather more than 12 miles, when it divides, one portion trending north-westward to the Gulf of Volo, the other south-westward to Oreos channel. It is approached from the south-eastward between the Skopelos islands and the coast of Eubœa, and from the northward through Skiathos channel; there are no dangers in Trikiri channel, and the water is deep. *See* views opposite.

**PONDIKO NISI.—LIGHT.**—*See* page 240.

**Platania bay.**—Good anchorage during northerly winds can be obtained in Platania bay, at the southern end of the Magnesian promontory, a little to the eastward of the sandy beach, and  $1\frac{1}{2}$  miles westward of Arapi point (Cape Sponge).

**GULF of VOLO (PAGASITIKÓS).**—Volo channel, the name given to the entrance to the Gulf of Volo, is 3 miles wide between the Trikiri peninsula and Cape Stavros, and between Cape Kavulia (the western extreme of the former) and the western shore. There are no dangers, and within the gulf opens out 18 miles east and west, and extends 14 miles northward.

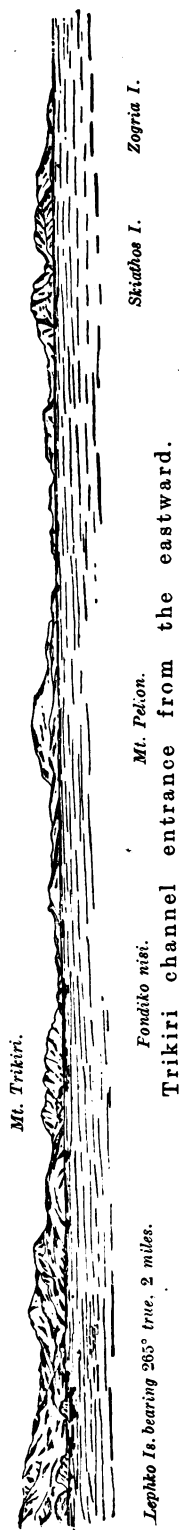
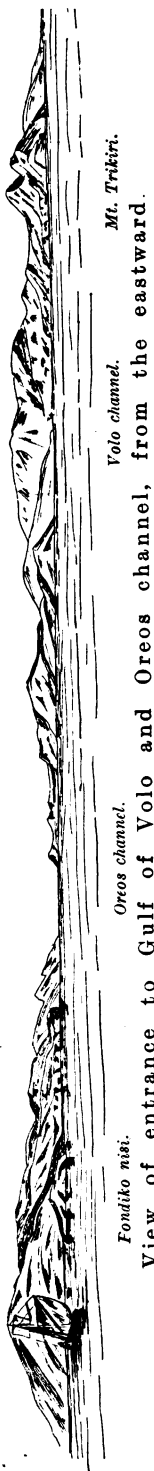
The gulf is surrounded by high land; on the west side of the entrance is Mount Klimo, 2,981 feet high; on the east, the peninsula of Trikiri is 1,040 to 2,171 feet high, whilst to the north, Mount Pelion rises 5,316 feet above the sea. The gulf is bounded on the east by the Magnesian promontory, which extends south-south-eastward from Mount Pelion, and by the Trikiri peninsula, connected to it by a narrow isthmus, on the south.

**LIGHT** (*Lat. 39° 06' N., Long. 23° 04' E.*).—A light is shown, at an elevation of 40 feet, from a mast over a white house, 23 feet high, on Cape Kavulia.

**Trikiri anchorage.**—Small vessels visit Trikiri bay, situated three-quarters of a mile south-east of Cape Kavulia (*see* above) and secure with their sterns to the shore. The village is composed of about a dozen houses, the town of Trikiri being on the heights above, and not visible from the shore.

**Telegraph.**—Trikiri village is a telegraph station.

*General charts 426, 1085, 2836b.*







*Plan of Ahilion anchorage on chart 1556. Var. 3° 40' W.*

**Port Phtilio.**—The entrance to this port is on the western side of Volo channel and  $3\frac{1}{2}$  miles westward of Cape Stavros (page 236). The port is about 2 miles deep in a south-westerly direction, and in the north-western part, 4 cables in extent, there is anchorage in 10 fathoms, mud. On the summit over Cape Pirgo, 490 feet high, is Achilles tower, square and conspicuous. It was from this place that Achilles is said to have embarked for the siege of Troy.

A patch of rock, with a depth of 6 fathoms over it, is situated nearly in the middle of Port Phtilio, 4 cables  $169^{\circ}$  true from Achilles tower, on Cape Pirgo summit (*Lat.  $39^{\circ} 02' N.$ , Long.  $23^{\circ} 00' E.$* ).

The Ahilion peninsula, on the south-west side of the port, extends north-north-eastward for more than a mile, is 130 feet high, and joined to the mainland by a low isthmus about three-quarters of a cable across; its average width is 2 cables, and the northern half is covered with thick low scrub.

Two small piers have been constructed on the south-east side of the peninsula of Ahilion for the embarkation of copper ore. Anchorage may be obtained off them in from 7 to 13 fathoms water. A rock, with less than 6 feet of water over it, is reported to exist a cable off-shore on the south-east side of the approach to the anchorage, but its existence is doubtful.

*Chart 1556, Gulf of Volo, &c.*

**Nies bay**, situated on the western side of the gulf, about  $3\frac{1}{4}$  miles from Klimo head, on the west side of the entrance, has depths of from 10 to 26 fathoms, and might afford temporary anchorage, but is exposed to the northward.

*Plan of Ports Surbi and Mijella on 1871.*

**PORT MIJELLA** is also situated on the western side of the Gulf of Volo, and about  $6\frac{1}{2}$  miles from Klimo head, west side of the entrance. It is sheltered from the south-east by Agios Nikolo island, which is from 50 to 60 feet high, and from the north-west by a peninsula, 522 feet high, separating it from Port Surbi. Between Maxwell point, the north-east extreme of this peninsula, and Vincent point, the north extreme of Agios Nikolo island, the distance is about three-quarters of a mile and depth 24 fathoms, whence the soundings gradually decrease to 3 fathoms, with mud bottom, three-quarters of a cable from the head of the port, eastward of the town; off the town itself, depths under 3 fathoms extend up to  $1\frac{3}{4}$  cables close to the western shore.

The port is three-quarters of a mile in length, and from 4 to 5 cables in width, and open to the northward. There is not more than 2 fathoms between Agios Nikolo island and the mainland. With the

*General charts 1556, 1085, 2836b.*

*Plans of Ports Surbi and Mijella on 1871. Var. 3° 50' W.*

exception of the bank at the head, the depth of 3 fathoms will be found within half a cable of the shores of the port.

- 5 The best landing in north-west winds is in the south-west corner of the port. A good anchorage berth is in 8 to 10 fathoms west of the channel inside Agios Nikolo island; a large ship should anchor farther out.

- Mijella town** or **Amaliopolis**, was so named in honour of a former Queen of Greece, and founded with the view of encouraging  
10 immigration; it had a population of 685 in 1896.

A valley bounds the town on the north, and separates the rising ground of the peninsula from the heights of the mainland.

- Communication, &c.**—Mijella is connected by telegraph with other parts of the world. Steamers from Volo to Piræus call occa-  
15 sionally at Port Mijella.

**Quarantine** is performed on Agios Nikolo island.

- PORT SURBI** (*Lat. 39° 10' N., Long. 22° 52' E.*) is the name given to the south corner of Almiros bay. It is separated from the port last described by a peninsula more than one mile long north and  
20 south, with a greatest width of about a mile, connected to the main by an isthmus less than one-third of a mile broad. The northern extremity of this peninsula is called Almiros point. Queen Olga hill, 522 feet high, is the highest part of this peninsula.

- Smith point** is the eastern entrance point of the port, the  
25 breadth of the latter, here, being  $1\frac{1}{2}$  miles. From this point, the port runs in southward about 2 miles, with depths over mud decreasing from 13 fathoms westward of Smith point to 3 fathoms 4 cables from the head.

- The depth of 5 fathoms will be found half a cable off the eastern  
30 shore, while not more than this depth will be found  $2\frac{1}{2}$  cables off the western shore, and the head of the bay cannot be approached with this depth to a less distance than about 6 cables.

Almiros and Surbiotika rivers empty into the low marshy head of the port.

- Lefroy patch**, with  $4\frac{1}{2}$  fathoms rocky bottom, is the only  
35 isolated danger in the port. It bears 202° true one mile from Smith point.

- Anchorage.**—Port Surbi affords more room and shelter than Port Mijella, but the low land renders it unhealthy. Vessels may  
40 anchor in 7 fathoms about 4 cables eastward from the landing pier at Zingheli and inside Lefroy patch, or in Fearless cove on the eastern side of the port, in 8 fathoms, mud bottom at each place.

*General charts 1556, 1085, 2836b.*

*Plans of Ports Surbi and Mijella on 1871. Var. 3° 50' W.*

**Pier.**—The landing pier at Zingheli, on the western shore, may be recognised by a red-roofed house. A road leads from the pier to the town of Almiros, prettily situated about 4 miles north-westward.

**Light.**—A light is shown from a wooden post on the pier at Zingheli (Tsiggelia) when a steamer is expected. 5

**Communication.** — Steamers running between Volo and Piræus occasionally call. The town of Almiros is a telegraph station.

*Chart 1556, Gulf of Volo, &c.*

**Coast.**—From Port Surbi, the low marshy shore of Almiros bay trends northward for  $6\frac{1}{2}$  miles, then eastward for 6 miles under high land, to Anghistri point (*Lat. 39° 18' N., Long. 22° 58' E.*),  $3\frac{1}{2}$  miles from the town of Volo. 10

**Agios Nicholas**, a small islet, lies south-westward half a mile from Anghistri point, and has a sunken rock about a cable from its south-west side. 15

**Coast.**—From Anghistri point, the coast turns abruptly to the north-west for  $1\frac{1}{2}$  miles, and then north-eastward for the same distance to Cape Sesklo, which will be again alluded to, in detail, in the description of the port of Volo. Between the headlands mentioned the western shore of the gulf recedes one mile, forming a bay, from the head of which a shoal bank extends about 2 cables. This bay is at the mouth of a valley flanked by an amphitheatre of hills, the ridge south of it rising to a height of 1,818 feet, those on the west to 1,427 feet, while the Bulbulithera hills on the north side are 660 feet high. 20 25

Between Anghistri point and the cultivated point on the opposite shore the Gulf of Volo contracts to a width of  $3\frac{1}{2}$  miles, forming a square-shaped bay, which at the distance of  $2\frac{1}{2}$  miles from its mouth contracts still more, forming the port of Volo, to be described after the eastern side of the gulf. 30

**Eastern shore of Volo gulf.**—From Cape Kavulia (which, with the lighthouse, were alluded to on page 246) the eastern shore of Volo channel trends about 3 miles north-north-eastward, with deep water close to it, and is backed by a ridge rising to a height of 1,287 feet. 35

**Paleo Trikiri** is the larger of two islands lying off the north-west part of Trikiri peninsula. It is  $1\frac{3}{4}$  miles in length north-east and south-west, by three-quarters of a mile in breadth, and 424 feet high. Between it and the peninsula is a channel 4 cables broad, and 34 to 22 fathoms deep. On the north-western side of the island, at three-quarters of a mile from the south-west end, is a monastery. 40

*General charts 1556, 1085, 2836b.*

*Chart 1556, Gulf of Volo, &c. Var. 3° 40' W.*

**Shoals.**—Two shoals, with a depth of 2 fathoms on each, lie 4 and 2 cables, respectively, north-eastward of Pardalos point, the north point of Paleo Trikiri.

- 5 **Tsamados shoal**, with 2 fathoms on it, lies 2 cables north-eastward of Alexi point, the north-eastern extremity of Paleo Trikiri. In other parts the island is steep-to.

- Pithu islet** is situated  $8\frac{1}{2}$  cables north-westward of Paleo Trikiri. It has dry rocks lying off its southern and western extremities, which, together with the rest of the islet, are steep-to, with the exception of  
10 a 6-fathoms patch 4 cables southward from the south point. Between this patch and Paleo Trikiri there is a channel with a depth of 32 fathoms. Pithu islet, with Almiros point on the west side, may be said to mark the boundary of Volo channel on the north.

- 15 **Trikiri harbour.**—From Trakhila point, three-quarters of a mile eastward of Paleo Trikiri, the north coast of the peninsula turns sharply to the southward and south-westward, forming the north-west shore of Trikiri harbour, where the water is inconveniently deep for anchoring. The head of the harbour reaches to within half a mile of  
20 the shore of Trikiri channel.

From this narrow corner the broken-up shore of the Gulf of Volo runs in a general north-easterly direction,  $6\frac{1}{2}$  miles to Kapri point, the western entrance point of Port Vathudi.

- Presutha islet** (*Lat. 39° 09' N., Long. 23° 11' E.*).—Nearly in  
25 the middle of this portion of the shore of the gulf is a deep bight, in the outer part of which is an islet 44 feet high, called Presutha islet.

Between the latter and Port Vathudi are two smaller bays, the western of which is known as Port Varelia, with a cluster of dry and sunken rocks in the middle of its entrance.

- 30 **Shoals.**—A rock, with one fathom of water on it, lies half a mile westward of Presutha islet, and 3 cables north of the rock is a patch with 5 fathoms. Another rock, with one fathom on it, lies nearly 2 cables south-westward of Presutha islet.

- Caution.**—Considerably less water than shown on the chart was  
35 reported, in 1916, on the 7-fathoms patch lying two-thirds of a mile southward of Presutha islet and the same distance eastward of Cape Marathea, the eastern entrance point of Trikiri harbour.

*Plan of Port Vathudi on 1871.*

- PORT VATHUDI** is situated in the extreme south-east corner  
40 of the Gulf of Volo, the head of the port reaching within a mile of Andriami bay in the Trikiri channel, and marking the junction of Trikiri peninsula with the Magnesian promontory. This port is protected by Alatas island,  $1\frac{3}{10}$  miles long, with an extreme breadth of a

*General charts 1556, 1085, 2836b.*

*Plan of Port Vathudi on 1871. Var.  $3^{\circ} 40'$  W.*

quarter of a mile. It is 200 feet high, and separated from the south-west angle of the port by a 2-fathoms channel one cable broad. The port is entered between Kapri point, the north extremity of Alatas island, and the straggling village of Melina on the shore half a mile east of it. 5

The extreme length of the port is  $1\frac{3}{4}$  miles, the width of the channel into it being at three-quarters of a mile southward of Kapri point, reduced to  $1\frac{3}{4}$  cables, with a depth of 15 to 20 fathoms. The port now expands into a roughly circular basin, the diameter of which between the 5-fathoms lines is about half a mile, and depth in the middle 17 fathoms, mud bottom. With the exception of the bar connecting the south end of Alatas island to the main, and the shallow bank extending one cable from the broad cove on the eastern side and two small coves on the southern side of the port, not less than 3 fathoms will be found half a cable distant from its shores. 15

A third of a mile eastward of the narrows the land rises to a height of 530 feet.

*Chart 1556, Gulf of Volo, &c.*

**Coast.**—From the entrance to Port Vathudi, the eastern shore of the Gulf of Volo trends north-north-westward and westward, with deep water close to it, 14 miles, to the cultivated point opposite Cape Anghistri, already mentioned. From this point, fronting the village of Lekhonia, the shore runs north-north-westward and then curves to the westward, forming two slight bays, for  $2\frac{3}{4}$  miles to Goritza point, the eastern entrance point of the Port of Volo. 20 25

*Plan of the Port of Volo on 1196.*

**PORT of VOLO.**—This port is situated near the centre of the north side of the gulf of that name. It is oblong in shape, being  $1\frac{1}{4}$  miles in length and about three-quarters of a mile broad. From the depth of 10 fathoms, which runs approximately from Cape Sesklo to Goritza point, the depths gradually lessen as the head is approached, and anchorage may be taken up as convenient, though large vessels usually anchor in about 8 fathoms. Vessels load and discharge by lighters. Volo is the principal port of Thessaly. 30 35

**Bank.**—A small bank of sand lies with its shallowest part,  $5\frac{1}{4}$  fathoms, half a mile south-eastward from Cape Sesklo lighthouse.

**LIGHTS** (*Lat.  $39^{\circ} 21'$  N., Long.  $22^{\circ} 58'$  E.*).—A light is shown, at an elevation of 82 feet, from a mast on a white house, 19 feet high, situated on Cape Sesklo or Fanari point, on the west side of the entrance to the Port of Volo. 40

Two lights, placed vertically, are shown from the outer extremity of the breakwater, and lights are also shown at the outer end of the railway pier and the north-west corner of the east mole.

*General charts 1556, 1085, 2836b.*

*Plan of the Port of Volo on 1196. Var. 3° 40' W.*

**Landmark.**—The new hospital, a two-storied building with a red roof, situated on the shore 6 cables west-north-westward of Goritza point, is conspicuous.

5 **Breakwater.**—A breakwater, starting from the end of the sea wall on the eastern shore opposite Yolkas point, extends south-westward for 220 yards, then west-south-westward for about 820 yards. There is an opening at the shore end of the breakwater for the use of boats landing at the steps.

10 **Piers.**—These are three in number. The east mole, of stone, extends south-westward from the fish market about 270 yards, with a breadth of about 60 yards, and has a depth of 2 to 3 fathoms at the outer end; near its extreme end is a shelter-house, painted red. A sea wall is built from the inner end of this mole in a south-easterly  
15 direction about 630 yards, to the root of the breakwater. This wall is continued from the pier in the opposite direction about 230 yards, where there is a small artificial harbour, suitable for small craft.

The railway pier is about 480 yards in length, the outer end being in about  $3\frac{1}{4}$  fathoms, the depths gradually shoaling to the shore. A  
20 mooring buoy is placed about two-thirds of a cable off the end of the railway pier in line with its length, another about half a cable south-westward of the pierhead, and three others along its western side.

The western pier (*Lat. 39° 21' N., Long. 22° 56' E.*), on which is situated the Port-office and a flagstaff, is about 150 yards in length; it  
25 is built of stone, and has 5 feet water at the outer end.

There is a crane at the Custom house capable of lifting 4 to 5 tons, and about 20 lighters from 25 to 50 tons in the port.

**Quarantine.**—The quarantine station is situated on the island of Agios Nikolo, Port Mijella.

30 **Volo town**, with a population of 23,363 in 1916, mainly Greek, fronts the north-eastern shore of the port, and is surrounded by gardens and olive yards on other sides. The western part of the sea front is mostly devoted to commerce, and includes the railway station and other public buildings; at the east end are bathing establishments and  
35 private houses. The modern quarter along the shore is thriving, while the Turkish quarter, with an abandoned fortress on a hill to the north-west, has decayed. The town has a school, museum, bank, &c. The ruins of ancient Pagasæ (a name still in official use) are situated on Cape Sesklo.

40 **Coal.**—About 7,500 tons of coal are imported annually in normal times, and about 3,000 tons are usually in stock; it is brought off to vessels in lighters and loaded in baskets. From 400 to 600 tons can be loaded in 24 hours. Small quantities of patent fuel can also occasionally be obtained.

*General charts 1556, 1085, 2836b.*

*Plan of the Port of Volo on 1196. Var. 3° 40' W.*

**Water.**—Good water from Artesian wells is procurable in lighters, ship's steam-launches being required to tow them off.

**Supplies** are fairly plentiful and at moderate prices, but notice is necessary if large quantities are required. 5

**Trade.**—In 1913, 109 foreign steam vessels, of 220,721 tons, entered the port, of which 14 vessels, of 24,636 tons, were British.

The imports are iron, steel, coal, manufactured goods, paper, rice, sugar, coffee, &c., and were valued in 1913 at £395,566. The exports are corn, cattle, tobacco, leather, silk, olives, hides, chrome ore, olive oil, wool, &c., and were valued in 1913 at £318,546. 10

**Communication.**—Greek steamers run daily to, and arrive from Piræus; and steamers of the Johnston line call from Great Britain and Piræus monthly. There is telegraphic communication with the Piræus, and thence to all parts. 15

**Railway.**—The railway communicates with the interior of Thessaly; viz., Larissa, 37½ miles, and Kalabakka, 101½ miles. Larissa connects with Athens, Saloniki, and thence with the European railway system.

**Roads.**—The road from Volo to Almiros is metalled and in good condition, as also is that from Volo to Postoria village. The Volo to Larissa road is in bad condition, unmetalled, and not suitable for motor traffic in winter; there is a road from Volo to Lekhonia village, which was once metalled, but in 1916 was in bad condition. There are no other roads from Volo. 20 25

**Tramway.**—A steam tramway runs through Agria and Lekhonia to Milies.

**Harbour dues.**—Vessels are subject to harbour dues.

**Tide.**—There is a rise and fall of tide at Volo of about 8 inches.

**A British Consul** resides at Volo (*Lat.* 39° 21' N., *Long.* 22° 56' E). 30

**Repairs.**—There are two small foundries, capable of minor repairs only, and there is a small slipway opposite Volo, suitable for small sailing vessels, lighters, &c.

*Chart 2072, Skopelos group.*

**SKOPELOS or THESSALIAN ISLANDS.**—These islands, belonging to Greece, extend from the south end of the Magnesian promontory in Thessaly, in an east-north-east direction for about 48 miles, and front the entrance of the Gulf of Saloniki. They consist of eight principal and several smaller islands and rocks, and are named Skiathos, Skopelos, Khelidromi, Peristeri, Pelago, Iura, Piperi, and Skantzura, besides the smaller islands or islets and rocks. They form an interesting and beautiful group, and their appearance from the sea 35 40

*General charts 1556, 1085, 426, 2836b.*



*Chart 2072, Skopelos group. Var. 3° 30' W.*

- is most pleasing, particularly Skiathos and Skopelos. The climate is generally agreeable, but sometimes the heat is excessive, and sudden changes in the weather are common, as with but little warning a heavy  
 5 gale succeeds a calm. The islands are generally healthy, though in the months of August and September fevers are of common occurrence.

*Chart 1556, Gulf of Volo, &c.*

- SKIATHOS**, the nearest of these islands to the coast of Thessaly, is  $6\frac{1}{2}$  miles in length, east-north-east and west-south-west, about  
 10  $3\frac{1}{2}$  miles in extreme breadth, and mountainous, its greatest elevation being Mount Stavros, 1,448 feet high, near the north-east end. The island is rich in wood and thicket, and the steep sides of the hills with which it abounds are overspread with evergreen foliage. The vine, the  
 15 olive, and barley are cultivated here and there. An excellent wine is made, and silk is produced with success. A few small vessels are annually built. The population of Skiathos, numbering 2,790 in the year 1896, is almost entirely occupied in seafaring pursuits.

*See view at page 246.*

*Plan of Skiathos harbour on 1196.*

- 20 **Skiathos harbour** (*Lat. 39° 10' N., Long. 23° 30' E.*) is situated on the south-east coast of Skiathos island, near the eastern end, and lies north-eastward about  $2\frac{1}{2}$  miles from Kavo Kalamaki, the south extreme of the island. It is an inlet about three-quarters of a mile deep, and half a mile wide at the entrance, narrowing to its head,  
 25 and extends north-eastward from the town, which is situated on the western entrance point. The north-western side is bordered by shallow water, which in places extends one cable from the shore; close to the shore adjoining the town is an islet 50 feet high. East of it, nearly in the middle of the entrance, is a smaller islet, Daskalonisi, 15 feet high,  
 30 having a shallow bank extending 50 yards from its western side and 75 yards from its northern end; a narrow ridge of from  $3\frac{1}{2}$  to 5 fathoms extends in a north-north-west direction from the islet to the shore.

- The Lazaretto, consisting of three small houses, with a mole for land-  
 35 ing, is on the eastern side of the harbour, opposite the town.

- The harbour is safe with any wind; the holding ground immediately inside the smaller islet in the entrance is bad, and it is recommended to anchor  $1\frac{1}{2}$  cables 29° true from this islet, in 11 fathoms, mud, and good holding ground, so as to have room to veer, as heavy breezes come  
 40 on without warning from the northward. This little harbour is rendered more secure during southerly gales from the protection afforded to it by the islands of Mirango, Zogria (Pakhia), and Zogriaki, which have deep water between them, though a shoal bank borders Zogria and extends 3 cables northward from its north end.

*General charts 1556, 2072, 426, 1085, 2836b.*

*Plan of Skiathos harbour on 1196. Var. 3° 30' W.*

There is no other safe anchorage in Skiathos, the bays on the north-west and southern sides having deep water and rocky bottom. The bays on the south side, as well as Skiathos harbour, have a small lagoon or swamp at their heads, and the inhabitants say that fevers, during the summer season, are common ; the town is yearly visited by sickness. 5

**LIGHTS.**—A light is shown, at an elevation of 138 feet, from a round masonry tower, with dwelling attached, 33 feet high, erected on the summit of Repi islet, on the north side of the eastern approach to Skiathos harbour. 10

A light is shown at an elevation of 33 feet, from a white iron beacon tower, 10 feet high, erected on Praso (Prasso) nisi, situated on the western side of the western approach to the harbour.

A light, elevated 40 feet, is also shown from a white column, 25 feet high, surrounded by a red brick wall, on the centre of Daskalonisi, off Skiathos town (*Lat. 39° 10' N., Long. 23° 30' E.*). 15

**Tide.**—The tide has been observed to rise at Skiathos about one foot, the stream apparently turning with high and low water by the shore.

**Directions.**—Vessels bound for this harbour from the northward between Skiathos and Skopelos, should pass eastward of Aspro, Arkakion, and Repi islets, as there is no safe passage inside them. 20

A sunken obstruction, with less than 16 feet over it, is reported to lie  $2\frac{4}{10}$  cables east-north-eastward of the rock, 6 feet high, one-third of a mile northward of Arkakion island. 25

After rounding the three above-named islets at a prudent distance, steer for Mirango, give it a berth of at least a cable and pass south of it, and eastward of Daskalonisi, at the entrance of the harbour.

When entering the harbour from the westward the passage between Kavo Kalamaki (the southern extreme of Skiathos) and Zogriaki is deep and clear. When passing eastward of Zogria do not go too near, and give its northern end a berth of half a mile. 30

**Town.**—The modern town of Skiathos is prettily situated on a projecting point on the west side of entrance to the harbour, with densely-wooded hills behind it, but the streets are poor. It stands on the site of the ancient town, which was destroyed by Philip of Macedon, when, with a view to security from pirates, the inhabitants built their town at the north extreme of the island on a steep and lofty mass of rock, to which the only access is by a wooden bridge. In 1829 the inhabitants returned to the ancient site. The deserted town at the extreme north presents a singular and picturesque appearance, and on all sides, except under the bridge, the precipitous rock is washed by the sea. 35 40

*General charts 1556, 2072, 426, 1085, 2836b.*

*Plan of Skiathos harbour on 1196. Var. 3° 40' W.*

**Communication.**—Besides the telegraph to all parts of the world, there is regular steamer communication with Piræus, Volo, and other ports.

- 5 **Supplies.**—It is difficult to procure any animal food but goat's flesh, and poultry is scarce. A little firewood and fruit may be obtained, and a small quantity of water from two wells behind the town.

*Chart 1556, Gulf of Volo, &c.*

- 10 **SKIATHOS CHANNEL.**—This channel, between the island of Skiathos and the coast of Thessaly, is a little more than 2 miles wide, with sunken dangers and irregular soundings.

Drift seaweed, wood, &c., are found in the channel during N.E. breezes.

- 15 **Cape Sepias** (*Lat. 39° 11' N., Long. 23° 22' E.*), the eastern point of the Magnesian promontory, is very steep, 365 feet high, and of a very dark colour; the next point to the north being reddish, these two points form an excellent mark for vessels coming from the north to distinguish Skiathos channel from Skopelos channel.

- 20 **Currents.**—The currents are variable and influenced by the winds, but generally set to the northward at from one to 2 miles an hour. Captain Schweisgut, of H.I.M. German ship *Hum*, on 26th January, 1886, reported that at two miles southward of Cape Puda, the south-west extreme of Skiathos, during a calm, he found a current  
25 setting east-south-eastward at the rate of 2 miles an hour. In light winds, a vessel under sail should give the dangers a wide berth.

- DANGERS.**—**Lephtari rock** (ancient *Myrmex*) is the crown of a rocky shoal about half a cable in extent, with deep water on its east side, and 3 to 15 fathoms close to on the west and south, beyond  
30 which there are from 26 to 49 fathoms, close-to, all round. It can generally be seen by keeping a good look out, as it is just awash, though at times, when the sea is smooth, it may not be detected until close to it; with a little swell only, it has been observed that the sea did not break. The rock lies with Marino rock in line with Kavo  
35 Kalamaki, bearing 99° true, one mile from the coast of Thessaly, or about one-third the distance across to Cape Puda, the south-western point of Skiathos. A few years ago there were the remains of an ancient building on Lephtari rock; the hewn stones of which it was built were plainly to be seen.

- 40 **Kastro nisia**, 105 feet high, the outer islet at the north end of Skiathos, twice its length open of Cape Gurnais, 49° true, leads eastward of Lephtari rock and westward of Agia Elena rock by day. (*See page 257.*) At night, Lephtari rock is covered by a *white occulting*

*General charts 426, 1085, 2836b.*

*Chart 1556, Gulf of Volo, &c. Var. 3° 40' W.*

sector of light from Pondiko nisi, and a *white fixed* sector of that light leads eastward of the rock.

**Marino rock** (*Lat. 39° 08' N., Long. 23° 26' E.*), 8 feet above water, rises from a bed of sunken rocks which are nearly 4 cables south-south-westward of the west point of Platania bay, on the south coast of Skiathos and  $1\frac{3}{4}$  miles westward from Kavo Kalamaki; the rocks are steep-to, and between them and the shore the water is  $5\frac{1}{2}$  fathoms deep. 5

**Cape Puda shoal.**—A shoal, with  $2\frac{1}{4}$  fathoms on it, lies about a quarter of a mile south-westward of Cape Puda, and bears the name of that cape. 10

**Agia Elena rock**, with  $1\frac{1}{2}$  fathoms water on it, and 5 fathoms between it and the coast of Skiathos, lies 9 cables north-westward from Cape Puda, and may generally be seen by keeping a good look-out. Cape Sepias in line with Cape Promiri, nearly  $2\frac{1}{2}$  miles to the northward, bearing 339° true, leads westward of Agia Elena and Cape Puda shoals, by day; at night, the *white fixed* sector of light from Pondiko nisi also leads westward. 15

**Gurnais shoal**,  $2\frac{1}{2}$  cables off Cape Gurnais (situated three-quarters of a mile north-east of Agia Elena point, the west point of Skiathos), has 3 fathoms water on it, and is steep-to. Cape Griva of Trikiri peninsula, in line with or just behind Arapi point, 241° true, leads north-west of Gurnais shoal. 20

**Euryalus rock**, on the western side of the channel, with  $2\frac{3}{4}$  fathoms on it, lies about 6 cables southward of Cape Sepias and  $2\frac{1}{2}$  cables from the shore. 25

The rock is covered by a *white occulting* sector of light from Pondiko nisi, and a *white fixed* sector of that light leads eastward.

The foregoing are the off-lying dangers; the rest of the coast line of Skiathos island, and the mainland shore of Skiathos channel, are skirted with scattered rocks, but they are close in and do not impede navigation. 30

**Directions.**—When entering Skiathos channel from the south-eastward, give Cape Puda a berth of about three-quarters of a mile, and steer 339° true with Cape Promiri in line with or a little shut in behind Cape Sepias, until the old town of Skiathos, at the north extreme of the island, is open of the western side of Skiathos, then keep in mid-channel. 35

From Trikiri channel, and near Arapi point, keep within half a mile of the main coast until the south end of Zogria is nearly in line with Cape Puda, bearing 107° true, then steer as convenient. 40

If from the northward, and bound outside Eubœa, keep in mid-channel until the south extreme of Zogria is just open of Cape Puda,

*General charts 426, 1085, 2836b.*

*Chart 1556, Gulf of Volo, &c. Var. 3° 30' W.*

107° true, then steer about 153° true; if bound for Trikirí channel, the mainland should be kept aboard or within the distance of about half a mile, to lead north-westward of Lephtari rock.

- 5 At night, the northern *white fixed* sector of Pondiko nisi light leads through the channel between the dangers on either side.

*Chart 2072, Skopelos group.*

- SKOPELOS ISLAND** (*Lat. 39° 08' N., Long. 23° 40' E.*), with a population of 5,295 in the year 1896, is 10½ miles in length in a north-west and south-east direction, rather less than 5 miles in extreme breadth, and tapers towards its north-west end. It is high, Mount Delphi, near the centre, being 2,150 feet above the sea. The island is fertile and well cultivated, producing oil, grapes, citrons, and other fruits. The north-west part of the island is called Glossa, from its  
15 resemblance to the shape of a tongue, and contains four villages, the largest being Platani. A quantity of light red wine is exported in vessels belonging to the island to Constantinople and ports in the Black sea.

- Skopelos bay.**—There are no good ports in the island, although  
20 during the summer months vessels lie off the town in Skopelos bay (sometimes called Agnontias harbour) on the north-east side of the island, exposed to the winds from that quarter, but which are said not to blow home at that period. The best berth is under the cliffs in the north-west part of the bay, with the starboard anchor in from 7 to  
25 10 fathoms, and a hawser fast to the rocks at the foot of the cliffs. Vessels should not anchor here during winter, unless in cases of necessity, as when north-east winds do blow they send in a heavy short sea. In the inner part of the bay are the ruins of an ancient mole, but it affords no shelter.

- 30 **Skopelos**, the capital town of the island, with a population of 3,779 in the year 1896, stands on a rocky projection and presents an imposing appearance from the sea. To the south of the town is a fertile plain surrounded by a semicircle of wooded hills.

- 35 **Communication.**—In addition to the telegraph to all parts of the world, there is steamboat communication with the Piræus, Volo, and other ports.

**Supplies.**—Refreshments, to a limited extent, may be procured, but no water without much difficulty, and then in small quantities.

- 40 **Staphilis bay**, on the south-east side of the island, 1¼ miles north-eastward of Velona point, the southern extreme, has anchorage for coasters during northerly winds. Staphilis point, on the east side, is of a reddish colour, and at a distance appears like a detached rock. A small supply of water may be procured from a fountain. A road

*General charts 426, 1085, 2836b.*

*Chart 2072, Skopelos group. Var. 3° 30' W.*

leads to the town of Skopelos through a well-cultivated valley, and the journey takes one hour.

**Agonia bay and Port Panormos**, both on the south-west side of Skopelos island, can be entered by small craft, but the water is deep for anchoring. 5

At the head of Agonia bay (*Lat. 39° 04' N., Long. 23° 42' E.*) is a small nook, where vessels perform quarantine; they moor head and stern. There is a small well of water, which has always 5 or 6 feet in it, and it is said that it never dries. From here to the town of Skopelos is 1½ hours' walk. 10

There is a small creek on the south side of Port Panormos, with 10 fathoms water at the entrance, but within it is shallow and rocky.

**Bank.**—A patch, with 6 fathoms on it, lies in the middle of the entrance to Agonia bay; it has deep water round it. 15

**Klima.—Anchorage.**—There is good anchorage in about 7 fathoms water, sand and weed, about one-third of a mile from the shore, off the village of Klima, on the west coast of Skopelos, 3 miles south-south-eastward of Guruni head, the north-west extremity, sheltered from all easterly winds. As north and north-easterly winds prevail during summer, this anchorage is available during that period. 20

**Water** may be obtained at the rate of about 1½ tons an hour, from a small stream northward of Klima. Boats can lie within twice their length of the beach; the water is about 30 yards within; an engine or a hand-pump may be used, or the water baled into a hose. It will be well to trace the stream up, to see that washing or other impurities do not affect the water. 25

**SKOPELOS CHANNEL.**—This channel, between Skopelos and Skiathos islands, is free from danger by keeping in mid-channel, passing midway between Repi and Praximada islets. 30

**Dasa islet** lies west-north-westward 4 cables from the northern entrance point of Port Panormos, is 100 feet high, conical, and wooded to its summit. Off its south-west side is the little islet or rock Strongylo. The water between the two islets and between Dasa and the shore is deep, but sailing vessels especially should avoid taking these passages on account of calms, strong and uncertain currents, and impossibility of anchorage. 35

A rock, with a depth of 4 feet over it, is situated about 80 yards off the south extreme of Strongylo.

From Dasa islet, round Cape Muti and the southern part of Skopelos, there are no dangers. 40

**Kasida and Plero.**—At about one mile north-westward of Dasa islet are the two little islets of Kasida and Plero; Kasida has a shoal

*General charts 426, 1085, 2836b.*

*Chart 2072, Skopelos group. Var. 3° 30' W.*

on its north side, with one fathom of water on it. Plero is one-third of a mile inshore from Kasida, and about half a mile north-north-westward of Plero is a  $5\frac{1}{2}$ -fathoms patch.

- 5 **Praximada**, the most northern of the islets on the Skopelos side, is small and barren, with deep water all round; the islet lies  $1\frac{1}{2}$  miles from the nearest point of Skopelos island and  $3\frac{3}{10}$  miles southward of Guruni head lighthouse.

**LIGHTS** (*Lat. 39° 11' N., Long. 23° 36' E.*).—

- 10 A light is shown, at an elevation of 223 feet, from a masonry tower, with square base, 47 feet high, on the west side of Guruni head.

A light is shown from Repi islet, on the west side of the channel. *See* page 255.

- 15 **Bank**.—At about half a mile north-westward of Praximada is a rocky patch with  $5\frac{1}{2}$  fathoms on it and 13 fathoms close to; in a vessel of heavy draught it should be avoided. Guruni head light is obscured over this bank and Skopelos island.



Guruni head lighthouse.

- 20 **KHELIDROMI (HALÓNISOS) CHANNEL**.—Teleio point, the south-west extreme of Khelidromi island, is distant 2 miles from Gurto point, the east extreme of Skopelos. Between the two islands are the islets of Agios Georgio and Mikro, narrowing the  
25 passage to 7 cables, and rendering it difficult for vessels to pass without a fair wind or steam power. Agios Georgio, the larger of the two islets, is next to Skopelos, and from it a bank, with  $1\frac{1}{2}$  fathoms water on it, extends westward about one-third of a mile, leaving between it and Skopelos a narrow but clear passage; the bank will generally be seen.  
30 Vessels taking this passage should keep the Skopelos shore aboard.

- The passage between Mikro islet (nearly 2 cables north-eastward of Agios Georgio) and Khelidromi island is 7 cables wide, deep and clear. The west face of Khelidromi is one mile north and south, and the shore is the base of Mount Khilia, which rises 1,000 feet immediately over  
35 the sea.

**Currents**.—The currents run strong in both channels, and are much influenced by the winds.

- KHELIDROMI (HALÓNISOS) ISLAND** (the ancient *Ikos*) is  $10\frac{1}{2}$  miles in length north-east and south-west, with an average  
40 breadth of  $1\frac{3}{4}$  miles, and is 1,590 feet high. It is generally barren and uncultivated, and no water can be obtained. The only village is on a sharp peak, at the south-west end of the island, near the sea. Some Venetian ruins of a fort attest that it was once of sufficient consequence

*General charts 426, 1085, 2336b.*

*Chart 2072, Skopelos group. Var. 3° 20' W.*

to be defended, but the inhabitants, who in 1896 numbered 594, are amongst the poorest in the archipelago. The island abounds in rabbits, and there is a plentiful supply of fish.

The site of the ancient town is at Kokino Kastro (*Lat. 39° 09' N., Long. 23° 55' E.*), on the south-east coast, so called from the deep red colour of the promontory on which it stood, and by which, now, the entrance to the little port may be known. Very faint vestiges, however, remain, as the facility with which the stones of the old town could be removed rendered it much easier to carry away the stones already prepared than to quarry others.

Many ancient tombs are on a gentle hill at the back of the site of the town. The burial ground is nearly covered with a thick growth of fir trees of a vivid green, which, contrasted with the bright red cliffs and earth, renders the surrounding scenery attractive.

During the survey of this island by H.M.S. *Bonetta*, in 1847, some silver and bronze coins of Alexander and Philip, and many vases, amphoræ, and sepulchral lamps were found.

**Anchorage.**—There is no harbour, properly speaking, in the island, though there are one or two limited anchorages with northerly winds, &c.; at Kokino Kastro, and off a low sandy point, on the south-east side of Khelidromi,  $1\frac{1}{2}$  miles south-westward of Aspro point, the northern extreme of Peristeri island. A mile west-south-westward from Kokino Kastro is a small bay having 9 and 10 fathoms water in the centre, and a small patch of 5 fathoms in the entrance; a vessel might lie here during a northerly wind.

**Port Eiraka.**—At the north-east end of Khelidromi is a narrow creek about half a mile deep, with 8 fathoms water, and no dangers, named Port Eiraka; it is not utilised, and there is no fresh water, but it might be of use as a port of refuge for small craft.

**Red and Moro islets.**—At  $1\frac{1}{2}$  miles eastward from Port Eiraka and near Gregali point, the north-east extremity of the island, are the two little islets, Red and Moro; the latter is surrounded by a narrow shoal bank, with a rock at the south-west end, and lies about half a mile north-eastward from Gregali point, and between it and Red islet the water is deep.

The north-western side of Khelidromi island is composed of steep precipices, and the most elevated part of the island, 1,590 feet high, is close to the north-western coast, about 3 miles southward of Eiraka point (*Lat. 39° 17' N., Long. 23° 57' E.*), its northern extreme. There are one or two bays, with two little islets, in the southern part of this side of the island, but nowhere along its whole length is there any anchorage.

*General charts 426, 1085, 2836b.*



*Chart 2072, Skopelos group. Var. 3° 20' W.*

**PERISTERI ISLAND**,  $4\frac{2}{3}$  miles in length and 817 feet high, has an irregular coast line, and a large bay on its western side, which nearly divides it into two parts, the southern portion of the island being the larger; the northern part is narrow. At the head of this bay is a small nook, named Port Vasiliko, where small vessels can anchor. There is a small inlet at the south end of the island, fit only for boats.

The island is barren, uncultivated, and has no water.

Peristeri island lies nearly parallel to Khelidromi, from which its south-west end is separated by a deep passage half a mile wide, and its north end by a passage about 2 cables wide. Within the extremes of the island the area opens out, and from the shore of Khelidromi to the head of Port Vasiliko the distance is 2 miles, but except at Port Vasiliko, and off the sandy point of Khelidromi,  $1\frac{1}{2}$  miles south-westward from Aspro point, previously mentioned, the water is too deep for anchoring.

The entrances are quite clear; bound from the northward or eastward, the north entrance may be recognised by Aspro point, which is low and white; vessels keeping in mid-channel may steer in without danger, but must not approach Aspro point too closely, as the depth off it is only 3 fathoms.

**Likorima island**, about three-quarters of a mile in length north and south, lies 6 cables eastward of the north end of Peristeri, and in mid-channel between them there are from 54 to 80 fathoms water.

**ADELPHI ISLANDS**.—Lying nearly parallel to and about 4 miles south-eastward of the south end of Khelidromi are the Adelphi islands, extending in a north-east and south-west direction 5 miles. The large Adelphi is one mile in length, cliffy on its east side, 520 feet high, and clear of danger.

**Adelphi Pulo** is close to the north-eastern side of the large Adelphi, the passage between being very narrow; a large rock lies off its north end.

**Cambrian rock**, the northern of the group, is only a little above water, with 3 fathoms close to it on the north and south; it lies  $23^\circ$  true from the peak of the large Adelphi island, and is distant three-quarters of a mile from the rock at the north end of Adelphi Pulo, with a clear passage between.

**Palir and Gadaro** (*Lat.  $39^\circ 03' N.$ , Long.  $23^\circ 57' E.$* ).—The two southernmost islets or rocks of the Adelphi group, small and low, lie  $208^\circ$  true,  $2\frac{4}{10}$  and  $2\frac{9}{10}$  miles respectively, from the peak of the large Adelphi island; they rise from shallow rocky ground which extends north and south from each islet. At about one-third of a mile westward of the space between the two is a rocky shoal with  $1\frac{1}{2}$  fathoms

*General charts 426, 2836b.*

*Chart 2072, Skopelos group. Var. 3° 20' W.*

water on it. The sea at times breaks heavily over these dangers. Between Palir and the large Adelphi there is no danger, and the passage is nearly two miles wide.

**SKANTZURA ISLANDS.**—This group, extending 4 miles in a general north-north-east and south-south-west direction, lies about  $4\frac{1}{2}$  miles east-south-eastward of the Adelphi islands, and consists of Skantzura and five or six small islets or rocks. Skantzura is 3 miles in length, north and south, with an irregular coast line, but no anchorage. A monastery stands on an elevation about one-third from its northern end. Off the north-west face of the island are three small islets, with shallow water extending a short distance northward of the outermost; between them and Skantzura is a deep channel a quarter of a mile wide.

**Strongylo islet.**—A small round islet called Strongylo lies three-quarters of a mile westward of the central part of Skantzura, and to the southward, near the shore, is the larger islet of Parausa.

**Skandilion.**—South-westward of Skantzura are the two islets of Skandilion, the smaller to the northward; the shallow water which surrounds them extends half a mile to the northward, and they are separated from the southern extreme of Skantzura by a deep passage 6 cables wide.

**Koraka.**—At nearly one mile south-westward of Skandilion is Koraka, the southernmost islet of the Skantzura group; the passage midway between is clear and deep.

**Rock.**—South-eastward of Koraka, distant half a mile, is a rocky shoal with only  $1\frac{1}{2}$  fathoms water on it. Vessels passing southward of the Skantzura group should give this danger a wide berth; it will generally be recognised by the heavy breakers over it.

**PELAGO ISLAND** (*Lat. 39° 19' N., Long. 24° 04' E.*) is  $4\frac{1}{2}$  miles in length, north and south, about  $2\frac{1}{2}$  miles in breadth, mountainous, being 1,050 feet high, uncultivated, and without water excepting in the rainy season, and then only in small quantities. A few years ago the only inhabitants were three monks, who resided on the north-east side of the island with a few goats.

On its south-west side is the island of Pelerissa, at the entrance of a deep bay, but there is no safe anchorage except inside a small yellow islet in the north corner of the bay, about 9 cables east-north-eastward of Pelerissa island. The anchorage, being very limited, is only fit for small vessels, and the anchor should be ready to let go in an instant; the western entrance is the best.

In steering for this anchorage a deep bight or bay, with a small plain at the head of it, will be seen on the starboard hand, and it would

*General charts 426, 2836b.*

*Chart 2072, Skopelos group. Var. 3° 20' W.*

appear to a stranger as a fit place to anchor, but the bottom is treacherous and not to be trusted; the bay should not be resorted to except in case of necessity.

- 5 At one mile eastward of the southern extreme of Pelago island and about 6 cables from the shore is a rock above water, called Melissa, with deep water around.

- Pelago channel.**—The passage between Khelidromi and Pelago islands is clear, deep, and 3 miles wide between Moro islet and Panagia point, the southern point of the bay just mentioned.

*Plan of Port Planedhi on chart 2072.*

- Port Planedhi**, on the north-east side of Pelago island, is nearly a lake, having 5 to 9 fathoms water, mud bottom, with two arms, one to the south-west, the other to the south-east. The entrance is only 15 90 yards across at the narrowest part, and 4 fathoms is the least depth of water in mid-channel. It can only be entered by a sailing vessel with a fair wind. A heavy swell sets into the outer part of the entrance during northerly winds, but in the port the water is always smooth, and a vessel could refit or heave down; at one time it was 20 much resorted to by pirates. A few goats may be obtained, but no water.

*Chart 2072, Skopelos group.*

- IURA ISLAND** is 4 miles in length, north and south, about 1½ miles in extreme breadth, and its northern end tapers to a point. 25 It has neither harbour nor roadstead, is uninhabited, and almost inaccessible. Large numbers of wild goats fatten well on the scanty herbage which clothes the sides of the precipitous hills of which the island is composed.

- At about 1¼ miles east-north-eastward from the north extreme of 30 Iura is a rocky bank, having from 10 to 15 fathoms water on it.

**Iura channel.**—The three islets named Prásson, Kubi, and Papu, eastward of Kento point, the north-east extreme of Pelago, are steep-to. Steno point, the nearest point of Iura, is distant from Pelago nearly 2 miles, and the channel is deep on either side of the islets.

- 35 **Current.**—The currents in the channel generally run according to the direction and force of the wind.

- PIPERI ISLAND** (*Lat. 39° 20' E., Long. 24° 19' E.*), which lies 6 miles east-south-eastward of Iura, is 2¼ miles in length north and south, and its average breadth is less than one mile. It is encompassed 40 by inaccessible precipices, has deep water all round, and possesses no shelter even for a boat. Between Piperi and Iura there are no dangers.

*General charts 426, 2836b.*

*Plan 2072, Skopelos group. Var. 3° 20' W.*

**PSATHURA ISLAND**, the most northern of the Skopelos group, lying  $3\frac{1}{2}$  miles northward of Iura, is one mile in length, north and south, and only a few feet above the sea. It has a small well of water near its south end, and some remains of ancient fortifications at its northern extremity. Its western side is steep-to, but its eastern side is bordered by a bank to the distance of about 3 cables, which continues round the south end of the island; it is resorted to by fishermen. 5

**LIGHT**.—On Psathura island, and 140 yards from its northern extremity, is a cylindrical masonry tower, 85 feet high, with dwelling attached, from which a light is shown, at an elevation of 131 feet. 10

**Muia**.—The little islet of Muia lies about half a mile southward of Psathura, and the ground between them is foul, rocky, and uneven, so that, although the depth midway is from 3 to 7 fathoms, vessels should not pass through. Muia is surrounded by rocky shallow ground, and at one-third of a mile south-westward of the islet is a rock with less than 6 feet water on it. The passage between this rock and the north point of Iura is  $2\frac{1}{2}$  miles wide, deep and clear. 15

**Caution**.—The current, with northerly winds and calms, sets strongly towards the Psathura islets, and has been the cause of many disastrous wrecks. Eastward of Piperi, in October, 1916, a slight north-east by east set was observed, with a fresh breeze from south-south-west, and in November, between eastward of Piperi and northward of Skyros, there was no current with light airs from east-south-east. 20 25

*Chart 426, Doro channel to the Gulf of Saloniki.*

**VENUS BANK**, with a depth of 44 fathoms over it and situated in lat.  $39^{\circ} 42' 10''$  N., long.  $24^{\circ} 32' 35''$  E., or 21 miles  $54^{\circ}$  true from the lighthouse on Psathura island, was reported by H.M.S. *Venus* in 1907. 30

*Chart 1085, Negropont to Gulf of Kassandra.*

**GULF of SALONIKI**.—From the Skopelos or Thessalian islands, the Gulf of Saloniki (ancient *Sinus Thermaeus* or *Sinus Macedonicus*) extends in a general north-north-west direction about 86 miles, and then north-eastward 10 miles farther to the town which gives its name to the gulf. The country on the western side of the gulf exhibits a magnificent range of mountains, which includes Mount Pelion, 5,316 feet high, rising over the head of the Gulf of Volo; Mount Ossa (Kissavo), 6,458 feet; and farther north-westward, Mount Olympus (Lat.  $40^{\circ} 05' N.$ , Long.  $22^{\circ} 22' E.$ ), which reaches 9,754 feet above the sea. On the eastern side of the gulf the land is also mountainous, though of less elevation than the summits on the western side. See views at pages 266, 269. 35 40

*General charts 426, 2836b.*

*Chart 1085, Negropont to Gulf of Kassandra. Var. 3° 40' W.*

The water throughout the gulf is deep, except within about 20 miles of the town, where there are anchoring depths in every part.

There are no off-lying dangers, but several low projecting points, as well as the low shore on the northern side of the head of the gulf, require caution in passing.

**Current.**—A strong current has been observed setting out of the gulf in March and April, probably owing to the melting of the snow and the freshets from the river.

**COAST.**—From Cape Promiri (*Lat. 39°13' N., Long. 23°21' E.*) in Thessaly (page 257), the shore trends north-north-westerly nearly 20 miles to Cape Pori, a rugged and slightly salient point with a rock close to its base, called by the same name; the coast between is nearly straight, backed by high land, and all along clear of danger. At nearly 3 miles south-south-eastward of Cape Pori is a beach and the village of Khorephpto.

About a mile inland from Khorephpto is the village of Zagora, a telegraph station.

Mount Pelion rises majestically 4 miles south-westward of Cape Pori, in a broad and rounded outline; when viewed from the southward, it shows two summits at some distance from each other, the depression between them being so slight as to give it the appearance of table land.

Between Cape Pori and Cape Kissobo, 21 miles further north-north-westward, the coast, forming a slight bend, is high and steep-to. Cape Kissobo is a prominent lofty headland; Mount Ossa, 8 miles westward of the cape, is steep, terminating in a cone. At 8 miles north-westward of Cape Kissobo is the entrance to Salambria river; the coast between is high and rocky and rises abruptly from the sea, and about midway between is the village of Karitza, about 500 feet above the sea, which shows conspicuously on the face of the steep mountain.

At about 2 miles south-east from the entrance to Salambria river the rocky coast terminates in a bluff point, and the mountain range falls a little back, bordered by a narrow belt of low land with a sandy beach, which continues to Leftoro-khori cliffs, 9 miles from the entrance to Saloniki bay.

*See view opposite.*

**Tsaghesi** (Tzai Agzi).—**Anchorage.**—In the small and shallow bay half a mile north-west of the bluff point just mentioned is the little village of Tsaghesi, containing about 50 houses, and close to a stony beach. The anchorage off the village is good during fine weather, and small vessels that frequent the place anchor in 7 fathoms, about half a mile from the beach. There are 10 fathoms water, sand and mud, about two-thirds of a mile from the shore, with Cape Kissobo, bearing 132° true, open of the bluff point south-east of the

*General charts 426, 2836b.*



*Mt. Pelion,  
bearing 199° true.*

*Mt. Ossa,  
bearing 248° true, 30 miles.*

*Mt. Olympus.*

View of the Western shore of Saloniki gulf from near Kassandra point.



*Chart 1085, Negropont to Gulf of Kassandra. Var. 3° 50' W.*

village, and the centre of the village bearing about 220° true; the soundings thence decrease gradually to the shore.

**LIGHT** (*Lat. 39° 52' N., Long. 22° 45' E.*).—A light is shown, at an elevation of 31 feet, from a red iron hut on a masonry base, 5 20 feet high, situated at Tsaghesi.

**Telegraph.**—The village of Tsaghesi is a telegraph station.

**Salambria river** (ancient *Peneus*) reaches the sea at this part of the Gulf of Saloniki through the celebrated vale of Tempe, a narrow rocky defile 5 miles in length, between the mountains of Olympus and Ossa, and where there is often only room for a traveller and the river to run side by side. The Salambria drains nearly the whole of Thessaly, and its course is about 110 miles long. 10

**Anchorage** will be found off the skala, near the mouth of the Salambria, in 9 or 10 fathoms, mud. Water may be obtained from the skala. The seine can be hauled near the mouth of the river, and soles, ray, and mullet caught. In the river the stream is too strong for the seine, as it sweeps the net and boats to sea. 15

**Platamona point** (*Lat. 39° 57' N., Long. 22° 44' E.*).—About 3 miles northward of Salambria river is Platamona point, low and surrounded by shallow water, which extends nearly one mile from the shore; at the extremity of the bank there is only 4 fathoms. Vessels should give the point a berth of 1½ miles in passing, or keep the high land of Cape Pori open eastward of Cape Kissobo, 151° true, which will lead outside the bank. 20 25

The town and fort of Platamona, 6 miles west-north-westward of Platamona point, consists of a large and irregular group of buildings surrounded by a wall standing upon a rocky height overhanging the sea; a good mark for this part of the coast. A stream runs into the sea on its south side. 30

**Caution.**—North and east of Platamona point the Surveys on which chart 1085 is founded are imperfect.

**COAST.**—Atherida point is about 25 miles northward from Platamona point; the coast between, at the base of Mount Olympus, forms a bend 6½ miles deep, and may be approached to a moderate distance, there being no off-lying dangers. The skala of Katarina is 8¼ miles south-south-westward of Atherida point, but at times the surf breaks heavily on the beach, and then there is no landing. The town of Katarina stands in a narrow plain between Olympus and the sea, and contains about 300 houses, which are surrounded with trees. 40

**MOUNT OLYMPUS.**—The summit of this majestic mountain, which is 9,754 feet high, shows a wide surface of bare light-coloured rock, capped with snow during the greater portion of the year. The



*Chart 1085, Negropont to Gulf of Kassandra. Var. 3° 50' W.*

broad side of the mountain, when seen from the eastward, presents a series of abrupt precipices of great height, broken at intervals by deep ravines, richly clothed with forest trees.

- 5     **Atherida point** (*Lat. 40° 22' N., Long. 22° 41' E.*) is low and projecting, with a steep-to bank of one fathom water extending 4 cables eastward from it. Between it and Panomi point, opposite, the gulf narrows to a width of  $10\frac{1}{4}$  miles.

*Chart 2070, Saloniki bay.*

- 10     **Leftoro-khori skala.**—From Atherida point the western shore of the gulf, with beach and cliff, trends in a general north-north-west direction  $6\frac{3}{4}$  miles to the skala of Leftoro-khori, where there is good landing, and off which, and to the southward of the banks extending from the mouth of the Vistritza river, there is good anchorage.
- 15     The anchorage is much frequented by Greek caiques, and affords good shelter for small craft in all weathers. The depth of water at the anchorage and in the approach to it is shallow, and only suitable for vessels of light draught. A good berth in 3 fathoms may be obtained by approaching with the conspicuous white house 4 cables northward
- 20     of the pier, on a 286° true bearing, and anchoring when about  $5\frac{1}{2}$  cables from the pier. No swell appears to reach the pier, although it may be heavy in the gulf.

- The rise and fall of tide appears to be about 6 inches, and the currents in the bay are variable and weak. There is a good pile pier
- 25     at the skala, 400 feet in length, 7 and 15 feet wide, and 4 feet above the water, with a maximum depth at the head of  $8\frac{1}{2}$  feet. A 2-feet gauge line of rails runs along its entire length, double-tracked at the head. Charcoal and timber are exported.

- South-eastward of the pier are steep cliffs about 100 feet high, with
- 30     a sandy beach with large boulders at the foot; on the other side of the pier the land mostly slopes gently down to a sandy beach. On the beach are three or four houses and warehouses, a café, and a fountain with a copious supply of fresh water, brought by pipes from the hill and discharged through a spout 3 inches in diameter.

- 35     There is a road from the pier to the railway, which lies 300 or 400 yards up the hill; a passable track, not metalled, leads to the village from the skala, passing over the railway by a level crossing. The old village of Leftoro-khori is on an eminence  $1\frac{1}{4}$  miles from the sea and pier; the village of New Leftoro-khori is on the hill about a
- 40     quarter of a mile inland.

**Caution.**—The coastline of the marshy land at the mouth of the Vistritza river is constantly changing, and the banks between the skala of Leftoro-khori and Vardar point should be approached with caution, as the depths are liable to change.

*General charts 1085, 2836b.*





*Kassandra point,  
bearing 336° true, 7 miles.*

*Mt. Athos.*

View of the South side of the Pallene peninsula, Saloniki gulf entrance.



*Kassandra point,  
bearing 2° true, 14 miles.*

*Cape Paliuri.*

View of the Eastern side of the entrance to Saloniki gulf from the southward.



*Mt. Hortiach.*

*Mt. Athos.*

View of the Eastern shore of Saloniki gulf.

*Kassandra point,  
bearing 136° true,  
20 miles.*

Chart 2070, Saloniki bay. Var.  $3^{\circ} 30'$  W.

**Vistritza river** (ancient *Haliacmon*).—The principal mouth of the Vistritza river is about  $4\frac{1}{2}$  miles north-eastward of the skala of Leftoro-khori, and from it marshy land, the coastline of which is constantly changing, extends  $3\frac{1}{4}$  miles to the south-westward. This marshy land is faced by shallow banks, which extend for about  $2\frac{1}{2}$  miles eastward of the skala, whence they turn to the north-eastward. At a point about  $2\frac{3}{4}$  miles east-north-eastward of the skala the bank dries in patches, and between this and Vardar point,  $5\frac{1}{2}$  miles to the east-north-eastward, the low broken shore recedes northward about  $2\frac{1}{2}$  miles. At the head of this bight are fisheries.

**Vardar river** (ancient *Axius*) rises on the eastern slope of the Chardagh, on the frontiers of Albania and Macedonia, and is joined by several streams in its course to the sea, which is about 160 miles long. The delta forms a low point or spit, the south-east extremity of which bears approximately  $68^{\circ}$  true, distant 8 miles from the skala of Leftoro-khori. The shoal water off the mouths of Vardar river and the light-buoy are alluded to in describing Saloniki bay (see page 272). Before this is done the eastern side of the gulf will be described.

The branch of the Vardar river discharging at Vardar point is called the Old Vardar.

Chart 1085, Negropont to Gulf of Kassandra.

**KASSANDRA POINT** (Lat.  $39^{\circ} 57'$  N., Long.  $23^{\circ} 22'$  E.) (ancient *Posidium*), on the eastern side of the entrance to the Gulf of Saloniki, is a long low point projecting to the south-west, and when first seen appears like an island. From the point eastward the land rises to the height of 1,078 feet, and terminates in Cape Paliuri (page 277), the western entrance point of the Gulf of Kassandra, distant 18 miles; the cape is low, as well as the land for some distance westward of it. From Cape Paliuri the high land of Sithonia peninsula, separating the Gulfs of Kassandra and Monte Santo, appears to the eastward, and beyond it the elevated cone of Mount Athos.

See views opposite.

**LIGHT**.—A light is shown, at an elevation of 72 feet, from a white stone tower, erected two-thirds of a mile within the extremity of Kassandra point.

**Anchorage**.—Anchorage may be obtained either north-westward or south-eastward of Kassandra point, according to the wind. At about  $1\frac{1}{2}$  miles eastward of the point, abreast a valley, there are 13 fathoms water, fine sand and shells. From this position Kassandra lighthouse bears  $281^{\circ}$  true, and a small hut near a beach, at the entrance to the valley,  $17^{\circ}$  true. The water shoals quickly to a depth of 3 fathoms, sand and weeds, at 2 cables from the shore. This anchorage affords shelter from N.W., round by north, to N.E. The chart shows the 30-fathoms line less than half a mile from the shore here.

In March, 1877, anchorage was found in 12 fathoms water, mud

*Chart 1085, Negropont to Gulf of Kassandra. Var. 3° 30' W.*

bottom, at about  $1\frac{1}{2}$  miles northward of the point. The lighthouse bore  $197^\circ$  true, and the southernmost of four mills in the valley  $80^\circ$  true. On sounding round the ship the bottom was found uneven,  
 5 shoaling suddenly to  $4\frac{1}{2}$  fathoms, at  $1\frac{3}{4}$  cables inside the ship. The stern swung from 20 fathoms into  $5\frac{1}{2}$  fathoms.

**Eastern shore of the gulf.**—When proceeding up the Gulf of Saloniki, there are no isolated off-lying dangers; the shore between Kassandra and Panomi points, a distance of 33 miles, forms a bend a  
 10 little more than 9 miles deep near the low isthmus of Potidæa. The narrowest part of this isthmus, less than two-thirds of a mile broad, is  $14\frac{1}{2}$  miles northward from Kassandra point. The coast between the point and the isthmus is bordered by shoal water, except in two or three places in the southern half; the coast from the isthmus to Panomi  
 15 is also fringed by shoal water, which, under the depth of 5 fathoms, extends off an average distance of half a mile, and behind it is high mountainous land.

*See views at page 269.*

*Chart 2070, Saloniki bay.*

20 **Panomi point** (*Lat.  $40^\circ 22' N.$ , Long.  $22^\circ 54' E.$* ) is very low and dangerous, projecting south-westward from a plain. It is surrounded by a dangerous rocky bank, which extends to the south-south-westward about two-thirds of a mile from the lighthouse, and requires great caution in passing. Anchorage will be found on either side of  
 25 the point, and there is a village on the plain. This point, with Atherida point on the opposite shore, narrows the gulf to  $10\frac{1}{4}$  miles.

**LIGHT.**—Two lights, placed vertically, are shown, at an elevation of 52 feet, from a mast on a white house, situated 394 yards within the extremity of Panomi point.

30 **CAPE KARA** and Vardar point, nearly 3 miles westward, form the entrance points of Saloniki bay. This cape, on which there is a fort, barrack, and lighthouse, is a cliffy bluff of tableland, 80 to 150 feet high, rising from the low shore which terminates in Tuzla point, a low spit of sand, situated about  $1\frac{3}{4}$  miles to the southward,  
 35 and which is difficult to distinguish, excepting when north or south of it; within the sandy shore between the cape and Tuzla point are salt-pans, half a mile in extent north and south. Tuzla point bears  $330^\circ$  true, distant nearly 7 miles from Panomi point, the shore between forming two bays  $1\frac{1}{2}$  miles deep, fringed with a shoal bank extending  
 40 for a distance of about one-third of a mile. From Tuzla point the shore northward round Cape Kara is bordered by shallow water, which from the latter extends westward for a distance of  $6\frac{3}{4}$  cables before the depth of 5 fathoms is reached.

**Rock.**—A rock, with less than 6 feet of water on it, lies about  
 45  $8\frac{1}{2}$  cables eastward of Tuzla point and  $2\frac{1}{2}$  cables off-shore; and a wreck,

*General charts 1085, 2836b.*

*Chart 2070, Saloniki bay. Var. 3° 40' W.*

with upper works showing, lies in 8 fathoms water about  $1\frac{1}{4}$  cables from the shore, nearly midway between the rock and Tuzla point.

**Vespasian shoal**, with  $2\frac{1}{2}$  fathoms of water on it, and composed of coral, lies about  $6\frac{1}{2}$  cables  $227^\circ$  true from Cape Kara lighthouse and 5 cables from the shore. It has  $3\frac{1}{4}$  to 4 fathoms close outside it, and  $2\frac{1}{4}$  fathoms between it and the land. 5

**Caution.**—As many vessels have grounded on the shallow ground surrounding Cape Kara, great attention should be given to the following directions:—Vessels entering or leaving Saloniki bay should not round the cape or approach the coast between it and Tuzla point, within a distance of one mile, nor stand into less than 10 fathoms water. 10

At night a *red* sector is shown over Tuzla point from Cape Kara light, but not over the shoal water described above, and the foregoing precaution must be taken to keep to the westward of it. 15

**LIGHT** (*Lat.  $40^\circ 30'$  N., Long.  $22^\circ 50'$  E.*).—A light is exhibited, at an elevation of 101 feet, from a white stone tower on Cape Kara.

*See sketch on chart 2070.*

The land at the back of the lighthouse is high, with a few buildings on it; there is a small stone pier at the base of the cliff near the lighthouse, having a depth of 4 feet at its outer extremity. 20

**SALONIKI BAY**, from the entrance to the town, trends north-east  $10\frac{1}{2}$  miles, with an extreme breadth of 6 miles, and has depths over muddy bottom varying from 17 to 7 fathoms. 25

From Cape Kara the broken cliffy land trends eastward for  $2\frac{1}{4}$  miles, when a low sandy shore continues round East bay to within  $2\frac{1}{2}$  miles of Mikra point.

*Plan of Saloniki anchorage on chart 2070.*

**Mikra point**, cliffy and 85 feet high, with a battery, barracks, and wireless telegraph station on it, should not be approached too closely, as depths under 5 fathoms extend  $4\frac{1}{2}$  cables from it. There is a large building, intended for an agricultural college, in course of construction about  $2\frac{1}{2}$  miles south-eastward from the point, which is a conspicuous object from the southward and westward; and near the shore, at less than  $1\frac{1}{4}$  miles to the north-eastward of Mikra point, are a large square mill and chimney, which are very conspicuous on a clear night. 35

Between Mikra point and the Hospital pier, 7 cables north-eastward, the shore is fringed by a narrow rocky bank with less than one fathom on it, which extends off  $1\frac{1}{4}$  cables near the pier, westward of the end of which are two rocks with 4 feet of water over them. The channel to the pier has a depth of 6 feet in the centre, and is marked 40

*Plan of Saloniki anchorage on chart 2070. Var. 3° 40' W.*

by two small buoys. The pier head in line with Kara Tepe, a conspicuous conical mountain, 2,416 feet high, bearing 114° true, leads in.

From Mikra point the low shore continues in a north-easterly direction to the outskirts of Kalamaria, the residential suburb of Saloniki, and thence northward to the south corner of the town itself. Here is a circular Venetian tower, some 500 years old, known as South bastion or White Tower, 118 feet high, making a conspicuous mark to vessels approaching the town, and for anchoring. Near this low shore, and about one mile southward of South bastion, are two chimneys of a brick factory, which are useful marks for anchoring on.

Besides the conspicuous objects mentioned above, others are: the slaughter house on the north shore of the bay; Yedikule citadel, above the town; the chimney 3 cables south-eastward of the White Tower; the Tumulus, 157 feet high, northward of the town; the Crown Prince's house in Kalamaria; and the buildings on Mikra point (*Lat.* 40° 35' N., *Long.* 22° 57' E.).

*Chart 2070, Saloniki bay.*

**Vardar point.—Light-buoy.**—A light-buoy, painted in black and white horizontal bands, and exhibiting a *white flashing* light, is moored about 6 cables south-east of Vardar point, the dry end of the spit formed at the mouth of the Old Vardar river, southward from which shoal water extends more than 6 cables.

There are 10 fathoms water one cable eastward of the position of the light-buoy.

**North-western shore.**—From the end of Vardar point the low, marshy, broken-up shore of Saloniki bay trends in a northerly direction for  $3\frac{1}{4}$  miles, and then to the north-eastward to the mouths of the Vardar river, a distance of  $5\frac{1}{4}$  miles, recurving thence to the northward and eastward to the western end of the town. The shore is cut up by numerous inlets and the outlets of several streams; an inlet  $1\frac{1}{4}$  miles north of Vardar point forms an extensive fishery. At times, the muddy water from the Vardar river and outlets of the streams reach nearly over to Cape Kara; these features, and the almost constant mirage over the low irregular shore, have led to many accidents.

**Naziki bank.**—Extensive flats front this shore, and in the case of Naziki bank extend to a distance of  $1\frac{3}{10}$  miles off-shore before a depth of 5 fathoms is reached, 47° true, distant 4 miles from Vardar point light-buoy.

*Plan of Saloniki anchorage on chart 2070.*

At  $3\frac{1}{2}$  miles north-eastward of Naziki bank the mouths of the Vardar river, which are constantly changing, form another projecting bank, the 3-fathoms edge of this bank bearing 225° true, distant  $3\frac{1}{2}$  miles from the south-east end of the breakwater at Saloniki. At  $1\frac{1}{4}$  miles further to the northward is a third projecting bank, the edge of which,

*General charts 1085, 2836b.*

*Plan of Saloniki anchorage on chart 2070. Var.  $3^{\circ} 40' W.$*

in 2 fathoms, lies  $249^{\circ}$  true,  $2\frac{1}{10}$  miles from the south-east end of the breakwater. Between this last bank and the town the 5-fathoms line approaches the shore to an average distance of 3 cables.

**Caution.**—Constant changes are taking place all along the north-west shore of Saloniki bay, and new mud flats are frequently formed by the rivers, especially in the vicinity of the mouths of the Vardar, where considerable alteration has taken place in recent years. 5

*Plan of Saloniki harbour on chart 2070.*

**Saloniki harbour** (*Lat.  $40^{\circ} 38' N.$ , Long.  $22^{\circ} 57' E.$* ).—A harbour with a general depth of from 4 to 6 fathoms, maintained by dredging, is formed by a quay 435 yards long, with a mole 220 yards long at each end, and an island breakwater, 600 yards long, facing it. In the centre of the breakwater is an obelisk. The south-eastern entrance has a depth of not less than 37 feet. 10 15

Entrance to the harbour is prohibited at night.

**Quays.—Depths.**—The depth alongside the main quay is 16 to 25 feet. The arms or moles have depths of 27 to 30 feet alongside the eastern one, and of 25 to 19 feet alongside the western one. At a distance of 20 feet out from the quays the depths are about 5 feet greater than those alongside. 20

There is accommodation for mooring alongside the quays and in the basin for about 20 vessels, and those of not more than 18 feet draught can lie alongside the breakwater except at its western end. There are mooring rings on the breakwater, so that vessels can anchor off and secure their sterns to these rings. There are five travelling steam cranes, one of 15 tons capacity, one of 5 tons, and three of 2 tons. 25

At the quay fronting the town southward of the harbour the depths are from  $1\frac{3}{4}$  to  $4\frac{1}{2}$  fathoms, as charted.

**Signals.**—A green flag is hoisted at the outer angle of the East mole when entry to the harbour is permitted, and a red flag when it is prohibited. 30

*Plan of Saloniki anchorage on 2070.*

**Chimneys.**—About 7 cables westward of the western mole, and close to the shore, are situated two conspicuous chimneys. 35

**Mooring buoys.**—A trot for the use of launches, consisting of five trunk buoys numbered from 1 to 5 from seaward, has been established from 233 to 443 yards south-south-westward from the White Tower, South bastion.

**Shoals.**—Three shoals, named the Ridge, forming a crescent curving to the eastward, with depths of  $3\frac{3}{4}$  to 5 fathoms and a width of from a quarter to three-quarters of a cable, extend for about  $6\frac{1}{2}$  cables in a general north-north-westerly direction from a position  $6\frac{1}{2}$  cables 40

*General charts 1085, 2836b.*



*Plan of Saloniki anchorage on chart 2070. Var. 3° 40' W.*

232° true from the south-east end of the breakwater. The space between the southern and middle shoals is about a cable, and between the latter and the northern less than half a cable.

- 5 A small shoal with  $4\frac{3}{4}$  fathoms lies  $8\frac{1}{2}$  cables 262° true from the north-west end of the breakwater.

**Light.**—A shoal, with a least depth of 5 feet, lies about 2 cables west-south-westward of the north-west end of the breakwater. On it is a wreck (1915), marked by a light.

- 10 **Telegraph buoys.**—Two spherical telegraph buoys, each surmounted by a ball, marking a submarine cable, are moored respectively 5 cables west-north-westward and 9 cables westward from the north-west end of the breakwater; the buoys are about  $5\frac{1}{2}$  cables apart.

- The anchorage** is anywhere off the town clear of the above  
15 Ridge shoal, in from 7 to 9 fathoms, good holding ground, but exposed to south-west winds. With these winds a sea soon gets up, and landing is then attended with difficulty, except inside the harbour. Winds from the north-west blow with great violence, and sometimes set in very suddenly, with a clear sky and with no warning.  
20 When leaving the anchorage, and obliged to beat down the bay, bearings of South bastion and Mikra point are capital marks to check the vessel's position in standing towards the north-west side of the bay until well down to Cape Kara, bearing in mind the report that the low broken shore on that side is constantly changing and the soundings  
25 off it liable also to change. *See Caution, page 273.*

**Piers.**—There are landing piers both north and south of the harbour, but the only loading piers in repair are the railway pier, northward of the harbour, and the brickworks pier, nearly a mile southward of the town.

- 30 *Plan of Saloniki harbour on chart 2070.*

- SALONIKI** (ancient *Thessalonika*) (Lat.  $40^{\circ}38' N.$ , Long.  $22^{\circ}58' E.$ ), on the acclivity of a steep hill, at the north-eastern extremity of the bay, is about 4 miles in circuit, and ascends from the sea in a somewhat triangular form, having high walls on the land sides, and enclosing the  
35 citadel above, which has seven towers. The walls, being whitewashed, make the town conspicuous from the sea, so that it is seen from a great distance; the architecture of the lower part of the walls is Cyclopean and Hellenic, while that of the upper part dates from the middle ages; the walls are built of brick, with ancient fragments intermixed. All  
40 the fortifications on the sea front have been taken down, and a sea wall and quay built.

The citadel, called by the Turks "Seven towers," is the old Acropolis, within which are the remains of some very antique pillars, and

*General charts 1085, 2836b.*

*Plan of Saloniki harbour on chart 2070. Var. 3° 40' W.*

of a triumphal arch erected in the time of Marcus Aurelius. Domes and minarets are numerous, and the town, being surrounded by plantations of cypress and other evergreens and shrubs, has an imposing appearance, contrasting greatly with its indifference within. In the commercial quarter the streets are broad, straight, and paved with lava. There are some well-built churches, mosques, synagogues, and modern buildings; but the older houses are fragile wooden structures, coated with lime or mud. There are numbers of elms, cypresses, and mulberry trees among the houses. The town is lighted by gas, as well as electricity. The Custom house, a fine large building, is at the north-west end of the quay. The sanitation of the town is defective. 5 10

The suburb of Kalamaria, containing many fine villas belonging to the richer inhabitants, lies to the east and south-east of the town.

The Turkish quarter is in the upper town, on the steep slope leading to the Citadel; the lower town is inhabited by the Jews, and the Greek quarter is on the south-east side, the most ancient part of the town. The principal street is the Rue Egnatia, which runs straight across the town; north of this street are the Government offices, and between it and the quay is the business quarter, with theatres, hotels, and cafés. The offices of the steamship companies are on the quay. 15 20

The foreign consulates are nearly all in the suburb of Kalamaria.

The railway stations are at the western end of the town, the Monastir-Uskub station being connected with Kalamaria by an electric tram. 25

**Population.**—The inhabitants of Saloniki amounted to about 160,000 in 1913, of whom 56 per cent. are Jews, being the descendants of those expelled from Spain at the beginning of the 16th century. The remainder are mainly Greeks and Mohammedans, but include about 4 per cent. Bulgarians, 2 per cent. Serbians and other foreigners, of whom about 300 are English. 30

The town is predominantly Jewish, and Saturday is the day of rest.

**Consul.**—A British Consul-General resides here.

**Trade.**—The principal exports are skins, silk, flour, cattle, tobacco, maize, barley, oats, rye, wheat, manganese, opium, &c.; the principal imports are coffee, chemicals, sugar, hardware, cotton and woollen goods. 35

**Shipping** (*Lat. 40° 38' N., Long. 22° 58' E.*).—The average number of vessels, including small coasters, that entered the port in each of the three years 1905-07 was 3,400, of 930,000 tons. 40

**Disease.**—The city, in common with the whole of the south-west Balkan peninsula, is subject to malaria, and the whole country at the head of the gulf is unhealthy. The natives are convinced of the efficacy of garlic or onions as a prophylactic, and they, whenever it is necessary

*General charts 1085, 2836b.*

*Plan of Saloniki harbour on chart 2070. Var. 3° 40' W.*

to spend the night near the river, consume unusual quantities of garlic, and the greatest care should be taken to avoid a chill.

**Communication.**—Frequent and regular steamship communication is kept up with Marseille, Venice, Volo, and other principal Mediterranean ports.

**Railways**—There is communication by rail with Monastir, Uskub, Nisch (for Vienna), Dédé Agatch, Adrianople, Constantinople, Belgrade, Athens via Larissa, &c.

10 **Telegraph.**—There is telegraphic communication with the archipelago and all parts of the world. A submarine cable is laid along the middle of the bay to Lemnos island, the landing place and stone cable house being situated near the western pier; the cable is marked by two buoys (*see* page 274). Vessels should avoid anchoring over it.

15 The telegraph office is open always.

**Supplies** are plentiful and cheap, with the exception of fish, which, being farmed out and heavily taxed, is dear.

There is excellent shooting in the neighbourhood, including pheasants, wood-cocks, wild-fowl, &c.

20 **Coal.**—About 32,000 tons of coal are imported annually, 7,000 tons being usually in stock. There is a depth of 13 to 25 feet alongside the quays. Coaling is performed by lighters carrying about 40 tons each, of which there are about 125. Considerable difficulty is usually experienced in obtaining supplies of coal at Saloniki. There is a small  
25 stock of oil fuel.

**Water.**—Excellent water can be obtained from hydrants on the quay; there is a water tank holding 20 tons for the supply of shipping.

The water in Saloniki bay is not good for distilling, as it causes the evaporators constantly to prime.

30 **Meteorology.**—For result of observations extending over several years at Saloniki (*Lat.* 40° 38' N., *Long.* 22° 58' E.), *see* Table, Appendix III., page 503.

*Charts 1085 and 1086, Gulf of Kassandra, &c.*

**PENINSULA of KHALKIDIKE**, bounded on the west by  
35 the Gulf of Saloniki, and on the north by Lakes Tanguza and Beshik, projects into the Ægean sea, terminating to the southward in the three remarkable peninsulas of Pallene, Sithonia, and Akte or Monte Santo, each projecting about 25 miles to the south-eastward nearly parallel to each other and embracing the Gulfs of Kassandra and Monte Santo.

40 The peasants are almost everywhere agriculturists, who cultivate the small amount of level or valley land available to a considerable extent, sending their surplus products to Saloniki. Vines, olives, figs, and mulberries (for the rearing of silkworms) are most grown on the higher ground; corn, maize, cotton, rice, and tobacco on the lower.

*General charts 1085, 2836b.*

*Charts 1085 and 1086, Gulf of Kassandra, &c. Var. 3° 30' W.*

Among the fruits grown in these districts are cherries, apricots, quinces, plums, and pomegranates; almonds, hazel nuts, and pumpkins are also common.

The principal resource of this district is in its mineral deposits, 5 which at present are not extensively worked.

The population in 1903 was 72,500, mainly Greeks.

**GULF of KASSANDRA** (ancient *Sinus Toronaicus*).—Of the above-mentioned peninsulas, the south-western, named Pallene or Kassandra, is the most fertile, the two others having in all ages been 10 rugged and clothed with forests.

The Pallene peninsula, united to the main on the north by the Isthmus of Potidæa (a narrow low neck), terminates in Cape Paliuri (page 269), and forms the south-western side of the Gulf of Kassandra. The village of Pinaka, formerly Pallene, from which the peninsula 15 takes its name, is situated at the north end of the peninsula and half a mile south of ancient Potidæa. A ruined rampart, with turrets, stretches across the isthmus from the shore of the Gulf of Saloniki to that of Kassandra, and is called the gate (*Porta*) of Kassandra. Hellenic blocks of the wall which defended the once flourishing city of 20 Potidæa (*Lat. 40° 11' N., Long. 23° 22' E.*) are still to be seen.

**Sithonia**, the middle peninsula, is mountainous, the most elevated part, which is near the centre, being 2,596 feet high; the coast is irregular, with scattered rocks here and there, and deep water close-to. It terminates on the south in Cape Drepano, a conical hill 889 feet 25 high, and separates the Gulf of Kassandra from the Gulf of Monte Santo.

The Gulf of Kassandra, at the entrance between the extremes of the two peninsulas, is about 8 miles in breadth, becoming narrower a few miles within, to 5½ miles between Cape Nikolo on the south-west and 30 Cape Papavea on the north-east; it afterwards widens to 13 miles, and extends in 29 miles to its head, where its width is 6½ miles and where anchorage may be found, but elsewhere the water is generally too deep.

**Current.**—In October, 1892, during the passage from Saloniki to Thaso island, a westerly set of half a mile per hour was experienced 35 south of the entrances to the Gulfs of Kassandra and Monte Santo. When 1½ miles off Cape Laura, Akte peninsula, a current to the south-west at the rate of 1½ knots was observed.

In November, 1916, southward of Capes Paliuri and Drepano, a current was experienced setting 301° true, more than a mile an hour, 40 with a light breeze from E.S.E.

**Caution.**—With the exception of the island of Lemnos, the Surveys on which chart 1086 is founded, are imperfect.

*Chart 1085, Negropont to Gulf of Kassandra.*

**Gerakini skala** (*Lat. 40° 16' N., Long. 23° 26' E.*) is situated 45 at the head of the Gulf of Kassandra, about 7 miles north-eastward of

*General chart 2836b.*

*Chart 1085, Negropont to Gulf of Kassandra. Var. 3° 30' W.*

Pinaka; the land in the vicinity of the skala is flat and partially cultivated, and an olive crushing factory is situated on the shore. The village of Gerakini lies half a mile to the northward.

- 5 There is a substantial wooden pier 140 feet long, 15 to 17 feet wide, and 3 feet above water, extending southward from the beach, with a depth of 8 feet at the end. Magnesite is shipped here from a mine situated about a quarter of a mile northward of the village, and is conveyed in trucks on a light railway to the pier, where it is loaded  
10 into small caiques and thus transferred to a ship. It is said that there are only about 20 days in the year on which caiques are unable to load alongside the pier, the worst months being January, February, and March, and that the sea is never too bad for the caiques to lie at anchor off the skala. This is probably due to the shelter afforded by  
15 a large shoal situated immediately to the southward. There are about 10 small caiques attached to the skala, and when not employed in loading are used for fishing, which is reported to be very good.

- Foul ground.**—The shore is foul and the water shoals from 12 to 3 fathoms in a distance of 2 cables when approaching. A large  
20 patch of foul ground, consisting of rock, weed, and sand, about  $2\frac{1}{2}$  cables in extent in a north-westerly and south-easterly direction, is situated off the skala, with its shoalest spot of  $1\frac{1}{4}$  fathoms, near the centre, south-south-eastward  $2\frac{1}{4}$  cables from the pierhead.

- Anchorage.**—Vessels should on no account anchor to the east-  
25 ward of the pier on account of the foul ground mentioned above. To the westward of the pier there do not appear to be any dangers, but the shore is foul, as previously mentioned, and caution should be exercised in approaching. The bottom is mud in 12 fathoms, about  $3\frac{1}{2}$  cables south-south-westward of the pier.

- 30 The beach is of soft sand, and has a fairly steep slope suitable for motor lighters. About 2 cables to the eastward of the large pier there is a small wooden one, 12 yards long, with only 4 feet water at the end. At about a mile to the westward of the skala, and opposite a conspicuous white house near the shore, are the remains of a very large  
35 rough stone pier built about 2,000 years ago; it is now submerged, and extends about a cable from the shore into  $3\frac{1}{2}$  fathoms of water. Its width is about 50 feet, but some of the stones have been rather scattered; at the head there is a depth of 5 feet over it, and at the centre about 3 feet. The water is very clear, and the bottom is quite  
40 visible in 3 or 4 fathoms.

The only road from the skala to the village is along the light railway track to the mine. The journey to Saloniki can be made by carriage in 10 hours, three horses being used. The journey on horseback takes from 5 to 6 hours.

- 45 There are no signs of wood or charcoal supplies.

*General chart 2836b.*

*Charts 1085, 1086. Var. 3° 20' W.*

**Kelpho islet** (*Lat. 40° 04' N., Long. 23° 45' E.*).—At 7¼ miles northward from Cape Nikolo (the north point of the eastern extreme of the Pallene peninsula) is the little islet of Kelpho, separated from the eastern shore of the Gulf of Kassandra by a passage 2¼ miles wide and 45 to 70 fathoms deep. 5

**Cape Kastro**, close to which is an islet surrounded by rocks, is situated on the eastern shore of the Gulf of Kassandra, 7½ miles northward of Kelpho islet.

**Shoal and rock.**—A shoal, about one cable in extent, on which is a rock with less than 6 feet over it, lies nearly 1¼ miles south-westward of Cape Kastro. Considerably less water than shown on the chart is reported between this shoal and Cape Kastro; the greatest depth is said to be 11 fathoms. 10

**Caution.**—No close examination has been made of this area, and mariners are warned to exercise great caution when navigating in this vicinity. 15

*Plan of Port Kupho on 1679.*

**Port Kupho.**—This little port, on the eastern side of the entrance to the Gulf of Kassandra, and 1½ miles northward of Ampelo point, the south-western extreme of Sithonia peninsula, extends in east-north-east half a mile, and then north-north-west about the same distance in Guras bay, where it is about 1½ cables wide. The depth of water is from about 35 fathoms at the entrance to 5 fathoms in Guras bay, sand and weed bottom, with occasional patches of mud. The entrance is between high bold land on either side, and 1½ cables north-west from the western entrance point is situated the islet of Praso (Peristonnisi or Pigeon island), surrounded by rocks above and below water. See view on chart 1679. 20 25

Immediately north-eastward of the west entrance point is Korakos bay nearly 2 cables deep. From Antikufos point, the shore trends east-north-east about 2¼ cables to Spilia point, whence the port runs north-north-west. Spilia point is foul for a quarter of a cable, and the point 3 cables eastward of it on the opposite shore is foul for three-quarters of a cable. There is nothing in the way in entering this little port but the shoals just mentioned, and its northern part is landlocked. The high cone of Mount Athos, 57° true, seen over the lower land of the Sithonia peninsula, leads to the entrance. See the same view. 30 35

Should Mount Athos be in the clouds, there is a one-storied white-washed house (ruin of a barrack) standing on the east side of the port, which is seen as a white square spot for a considerable distance. This house, bearing 63° true, leads also to the entrance of Port Kupho. There is a well on the east side of the port, about 70 yards south-south-east from the ruined barrack, but the water is not good. 40

For additional information, see Appendix V., page 508. 45

*General charts 1086, 2836b.*

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° 20' W.*

**The GULF OF MONTE SANTO** is very similar to the Gulf of Kassandra, but wider at the entrance. It is bounded on the south-west by the peninsula of Sithonia and on the north-east by that of Akte or Monte Santo; the entrance between Skepe reef, on the west, and the base of Mount Athos, is about 13 miles wide, and thence the gulf runs in 26 miles to its head. The water is everywhere deep, and there are no off-lying dangers. See view opposite.

*Plan of Port Sikia on 1679.*

**Skepe reef** (*Lat. 40° 01' N., Long. 24° 02' E.*).—From Cape Drepano the coast trends eastward for nearly 3 miles to Cape Pseudo, which is foul; it then turns to the north-north-eastward and northward for 5 miles to Adolo point, the south entrance point of Port Sikia.

At about 6 cables southward of Adolo point a rocky ledge extends about a third of a mile from the shore, and forms a tongue to the southward parallel to the coast for three-quarters of a mile. At about 2 cables from its north-east shoulder is a large rock or islet; other rocks are above water, and elsewhere there are from 12 to less than 6 feet water on it. Within this rocky tongue, called Skepe reef, there are 7 and 10 fathoms water, leading to a small cove. The reef skirts the most eastern part of the Sithonia peninsula, and should be given a fair berth in passing.

**Port Sikia**, on the south-western side of and near the entrance to the Gulf of Monte Santo, is nearly  $1\frac{1}{2}$  miles deep, having from 16 to 5 fathoms water, sandy bottom. Cape Sikia, the north point of entrance, is foul, and south-west of it is a little islet called Apastro, with rocks above water and sunken extending a cable south-eastward. A rocky patch called Sikia shoal, the least depth on which is  $1\frac{1}{2}$  fathoms, lies about 4 cables,  $137^\circ$  true, from Cape Sikia, and about  $2\frac{1}{2}$  cables eastward of the rocks off Apastro, with 12 to 15 fathoms between. The passage into the port, between Sikia shoal and Adolo point, is clear and about 6 cables wide. On the point westward of Adolo point is a flagstaff, and on the north-west side of the port is a conspicuous white house with a well near it. The shore at the head of the port is a beach, with two conspicuous windmills, and  $2\frac{1}{4}$  miles westward from the north end of this beach is the village of Sikia (the ancient *Singus*), which gives its name to the bay. The southern windmill, bearing  $262^\circ$  true, leads into the port.

*Chart 1086, Gulf of Kassandra to Thaso, &c.*

**Dangers.**—Rikha point, about 3 miles northward of Port Sikia, has a reef extending from it, and 2 miles farther north-west is a little projection to the north, surrounded by an extensive bank, and called Shoal point; a reef lies also at the foot of Trako head,  $3\frac{1}{4}$  miles north-westward of the latter point. These dangers should be given a wide berth in passing.

*General charts 1086, 2836b.*

To face page 280.]



*Cape Drepano,  
bearing 270° true,  
21 miles.*

*Mt. Karema.*

*Kastana point.*

*View of the entrance to the Gulf of Monte Santo.*

*Mt. Athos.*

*Cape Laura.*





*Plan of Port Dimitri on 1679. Var. 3° 20' W.*

**Port Dimitri (Port Vuvoru)** (*Lat. 40° 13' N., Long. 23° 47' E.*).

—On the south-western side of the Gulf of Monte Santo, and about 10½ miles from Rikha point, is the island of Dimitri, 1¼ miles in length, north and south, and three-quarters of a mile in breadth, and irregular in shape. A reef extends about 1¼ cables from its south-eastern point, near the outer end of which is a rock above water, with a depth of 2¼ fathoms 35 yards south-eastward of it.

Port Dimitri is formed between the island of that name and the low shore of a bay. The south passage into the port is between the rock above water, just mentioned, extending from the south-eastern point of the island, and a little islet, with sunken rocks on its east and west sides, lying nearly midway between it and the mainland shore.

In the channel between these rocks there are 14 fathoms of water, but immediately within it shoals to 4 fathoms; farther in there are depths of 5, 6, and 10 fathoms, which increase northward to 22 fathoms, and decrease again to 5 fathoms in the northern passage between the two islets lying between the north end of Dimitri island and the main shore. The depths in the south part of the port are the most convenient for anchoring; here the widest part of the port is about half a mile in breadth.

*Chart 1086, Gulf of Kassandra to Thaso, &c.*

**Coast.**—The shore of the gulf at its head, from Port Dimitri to Problaka bay, appears to be rugged and steep-to, and to afford no anchorage.

*Plan of Problaka bay on 1647.*

**Problaka bay.**—**Mulari island** (*Lat. 40° 20' N., Long. 23° 55' E.*), in the north-east corner of the Gulf of Monte Santo, is nearly 3¼ miles in length west-north-west and east-south-east; its north-western side is 1¼ miles long, whence it tapers to the south-east. It fronts the Isthmus of Xerxes on the south, from which it is distant 1¼ miles.

A shoal spit, with a little islet about 30 feet high near its outer end, extends 3½ cables north-north-westward from the western extreme of the island, and at 2 cables eastward of this islet is another, about 18 feet high and one cable from the shore, on a detached shoal patch; a shoal, with 2 fathoms water on it, lies 2 cables north-eastward of the latter islet, its outer edge being a quarter of a mile from Mulari island.

A cluster of islets and rocks lie close off the south-eastern extreme of the island, to which they are united and to each other by shallow rocky ground. These islets reach more than half way to a slight projection of the main shore, 1½ miles east-north-eastward, on which there is a square tower called Pyrgo. From this point a bank, under the depth of 3 fathoms, extends westward 4 cables and south-westward 3 cables.

*General charts 1086, 2836b.*

*Plan of Problaka bay on 1647. Var. 3° 20' W.*

- Shoal.**—An isolated rock, with  $2\frac{1}{2}$  fathoms water on it, lies in the middle of the passage between Pyrgo bank and the north-eastern islet off Mulari. The rock lies 3 cables eastward from the south extreme of this islet. There is a narrow passage on either side of the rock, and depths of from  $3\frac{1}{2}$  to 5 fathoms.

**Cygnnet rock**, a pinnacle with one fathom of water on it, and 5 to 7 fathoms at the distance of 30 to 40 yards around it, lies 279° true, about 4 cables from the north extremity of the north-east islet.

- The Isthmus of Xerxes**, which unites the Akte peninsula to the main, consists of level land and low hills, from which the land rises and forms a steep central ridge which runs south-eastward. The site of the Xerxes canal is a hollow between natural banks, and several artificial mounds and remains of walls can be traced along it. Its length across the isthmus is about  $1\frac{1}{4}$  miles; the hills on its western side range from 350 to 510 feet high, and those immediately on the east to 170 feet.

- Anchorage.**—The shore on the south side of the isthmus forms a slight curve, between which and Mulari island there is anchorage on a sandy bottom, but the water is deep. Large vessels should not anchor in less than 25 or 20 fathoms, at about 3 cables from the beach. The anchorage is north-north-westward of Fearless point, the north-eastern extreme of Mulari island, and eastward of Spratt point, a sandy projection at the western extreme of the bay.

- Chart 1086, Gulf of Kassandra to Thaso, &c.*

- AKTE, or MONTE SANTO PENINSULA.**—The north-eastern of the three peninsulas, the ancient *Akte*, is rugged, and intersected by numerous ravines; the land rises abruptly from the Isthmus of Xerxes to about 300 feet, and for the first 12 miles to the south-east it is nearly level, about 600 feet high, and for the most part thickly wooded. It then becomes mountainous, the heights being 1,708 and 2,195 feet; on the northern slope of the latter elevation, and at a nearly equal distance from the north-east and south-west coasts, amidst vineyards and gardens, is the town of Karies, the capital of the peninsula.

- Mount Athos (Haghion Oros)** (*Lat. 40° 09' N., Long. 24° 20' E.*).—From the last-mentioned height a rugged broken country, with dark forests, extends south-eastward to the foot of Mount Athos, an isolated cone of white limestone, which rises in solitary grandeur 6,349 feet above the sea.

*See views at pages 280, 284.*

The coastline in the vicinity of Cape Santo, at the south-eastern end of the peninsula, is reported to be incorrectly charted.

*General charts 1086, 2836b.*

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° 10' W.*

**Monasteries.**—Mount Athos, as well as the peninsula from which it rises, is now known throughout the Levant as the Holy Mountain, or Monte Santo, from the number of monasteries and chapels which are scattered over it. These semi-fortified monasteries, of which there are about twenty, of different degrees of magnitude and importance, with the farms attached to them, are spread over the whole peninsula. Most of them were founded during the Byzantine Empire, and some of them trace their origin to the Empress Helena, the mother of Constantine the Great. Each of the different nations belonging to the Greek Church has one or more monasteries of its own, and they are visited periodically by pilgrims from Russia, Servia, Bulgaria, Greece, Asia Minor, Constantinople, &c.

**Russiko monastery,** also known as Saint Pantaleimon, is situated on the south-west side of the peninsula, about 8 miles from Cape Kapso, its south-western extreme. It was founded for Russians in the 12th century, but now the majority of the brethren are Greeks. The monastery itself is enclosed by a wall, which has only one gateway, but the workshops, storehouses, and dwelling-houses surrounding it, and between it and the water's edge, give it the appearance of a town. It is increasing in size each year, and its white walls can be seen a long way off.

**Anchorage.**—Below the monastery is a small bay, with a depth of 20 fathoms at 80 fathoms from the north shore. In order to anchor in this depth, bring in line the north end of the monastery (on the east side of the bay), the house with the attic on the hill above it, and a conical hill rather more elevated above the monastery than the others. On this line a steam vessel should proceed slowly, and as soon as the abrupt headland nearest the monastery pier begins to cover the house standing behind it, the anchor should be let go. The conical hill is always easily distinguished.

The little bay is reported snug enough excepting in southerly winds; several small craft are usually at anchor in it, and, among them, the steam launch belonging to the monastery (*Lat. 40° 14' N., Long. 24° 13' E.*).

The inhabitants of the monastery say that strong north-west winds occur, though very seldom; during winter, however, north-east winds mostly prevail, and are sometimes very violent.

**Mooring buoys.**—There are two red mooring buoys a little west of the monastery, the outer one being placed in 22 fathoms of water a little over one cable from the shore, the other nearer the shore. These buoys were placed by the Russian Navigation Company for their vessels to make fast to, head and stern. The outer buoy is suitable for vessels up to 4,000 tons; permission was given by the monks to a British man-of-war to secure to it in 1899.

*General chart 2836b.*

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° 10' W.*

**Daphni Quarantine station** (*Lat. 40° 12' N., Long. 24° 14' E.*).

5 --Kastana point, on the south-west side of Akte peninsula, is about 6½ miles from Cape Kapso and 2 miles southward from Russiko monastery. About half a mile northward of Kastana point is the Quarantine station of Daphni, at which vessels with pilgrims to the various monasteries report. The doctor is not always present at the station, being frequently at Karies, 2 miles distant, but he is generally at Daphni when a vessel is expected.

10 **LIGHT.**—A light is shown, at an elevation of 52 feet, from an iron hut on masonry base, 20 feet high, situated at Daphni, about one mile northward of Kastana point.

**Mooring buoys.**—There are three white mooring buoys in the bay off Daphni, the outer one being suitable for vessels up to 15 4,000 tons.

**Telegraph.**—Daphni is a telegraph station.

**Anchorage** will be found in one or two other bays, off the monasteries; the best, on the north-eastern side of the peninsula, is Iberon bay, 1½ miles eastward of Karies, in 9 fathoms, sand, with the tower 20 of the monastery 223° true; also in Paidia bay, 5 miles north-westward, which is more sheltered, in 12 fathoms, mud, and good holding ground, though a small vessel might go farther in. Off some of the monasteries there is no anchorage, and to land goods or passengers a vessel must lie-to. Many of these monasteries appear at a distance 25 like little towns.

There is no anchorage around the base of Mount Athos, the water being too deep.

*Plan of Erissos bay on 1647.*

30 **ERISSOS BAY.**—On the north side of the Isthmus of Xerxes, and about 3 miles eastward of its narrowest part, a tongue of land projects 4 miles northward; its extremity is known as Cape Plati, and close to it are two large rocks or islets.

35 **Cape Eleuthera** (*Lat. 40° 31' N., Long. 23° 56' E.*), a steep rugged projection about 6 miles north-westward of Cape Plati, has a small islet, called by the same name, and three rocks, above water, close to it, and everywhere deep water.

Between the two capes is the entrance to Erissos bay, which is 6 miles deep and 10 miles in breadth north-west and south-east. See view opposite.

40 *Plan of Plati harbour on 1647.*

**Plati harbour.**—On the east side of Erissos bay, and a little more than a mile south of Cape Plati, is a nearly circular bay, about 3 cables in diameter, with from 4 to 8 fathoms water, named Plati

*General charts 1086, 28366.*



*Mt. Athos.*

*C. Plati.*

View of the entrance to Erissos bay from the northward.  
*Eleuthera I.,*  
bearing  $193^{\circ}$  true,  
7 miles.



*Plan of Plati harbour on 1647. Var. 3° 20' W.*

harbour; although the bottom, composed of mud, sand, shells, and stones, is not good holding ground, the harbour is considered a safe port of refuge.

Shoal water, under 5 fathoms, extends one-third of a cable from Quill point, the north entrance point, three-quarters of a cable from Hunt point, the south entrance point, and  $1\frac{1}{4}$  cables from the head of the bay. A rock awash, and one with a fathom of water on it, lie close off Hunt point, which is about 200 feet high. A conspicuous white rock, about 25 feet high, stands on the north-east shore, and a conical rock, about 18 feet high, is on the shore at the head of the bay, 2 cables south-eastward of the former.

*Plan of Erissos bay on 1647.*

**Ammos point**, on the north-west side of the Isthmus of Xerxes, and  $1\frac{1}{4}$  miles east-south-eastward of Erissos, is surrounded by rocks to the distance of about one cable; one-third of a mile westward, other rocks extend off about the same distance.

**Erissos** (ancient *Acanthus*), now a straggling village, is on the coast one-third of the way between Ammos and Mison points. The ruins of a fortress, which surmounts the village, are of mediæval construction, but its foundations are Hellenic, as also are many masses of masonry around.

**Mison point** (*Lat. 40° 26' N., Long. 23° 52' E.*), opposite the middle of the entrance to Erissos bay, is high and bears 214° true from the eastern extreme of Eleuthera islet.

**Rock**.—A shoal, on which is a rock with 2 feet water on it, lies with its outer end bearing 343° true,  $1\frac{2}{10}$  miles from Mison point and 6 cables off-shore.

With this exception, there are no known off-lying dangers. The holding ground is said to be mud and sand.

**Stratoni bay** is the name given to the north-west corner of Erissos bay, where vessels have recently loaded manganese iron ore. The ore is mined at a place called Isboros, situated about 5 miles inland, where there is a telegraph station. The smelting is done at Stratoni, recognisable by its chimney, circular furnaces, and dwellings of the workmen. A light railway connects Stratoni with the mines. In 1905, 27,900 tons of manganese and 12,900 tons of iron pyrites were exported.

Stratoni is  $3\frac{3}{4}$  miles westward of Eleuthera islet and  $4\frac{1}{2}$  miles northward from Mison point. A bank on which are depths of 5 to 15 fathoms, sand and weed, extends about  $2\frac{1}{2}$  cables from the shore at Stratoni. There is a pile pier, with a depth of about 16 feet at its outer end, and a short distance eastward of it a brick structure, with a transporter, is built out into the sea and connected by aerial wires

*General charts 1086, 2836b.*



*Plan of Erissos bay on 1647. Var. 3° 20' W.*

to the shore. Off this structure are two mooring buoys, between which ships are moored and loaded direct from the transporter.

- 5 North-east gales throw in at times sufficient swell to prevent loading, and compelling a ship to take shelter in Plati harbour already described.

There is a small workshop, where the railway trucks are made and repaired; it would probably be capable of dealing with small repairs to submarines, &c.

- 10 **Water.**—Fairly good well water can be had by means of casks, and, by several days' notice, a few sheep may be procured.

**Pratique** is obtained at Daphni, already alluded to. The usual Custom house and Consular business is done at Saloniki, to which the mining engineer sends a messenger twice a week.

- 15 *Chart 1086, Gulf of Kassandra to Thaso, &c.*

- The GULF of RUPHANI or ORPHANI** (ancient *Strymonicus Sinus*), northward of Erissos bay, is 12 miles wide at the entrance between Cape Eleuthera and Cape Deutheros on the north-east. From the line of these capes, the gulf recedes north-westward  
20 14 miles to the sandy beach at its head, which is backed by high land.

- Libiadha bay** (Lat. 40° 36' N., Long. 23° 48' E.) lies 7 miles north-westward of Cape Eleuthera. In front of the bay is the little islet of Kaphkana, surrounded by a reef, with rocks above water on its northern and south-western sides. Between the islet and the bay  
25 there are 12 fathoms water, but rocks, sunken and above water, extend off the north point of Libiadha bay towards Kaphkana islet, leaving, however, a 9-fathoms channel between. Nearly midway between Cape Eleuthera and Kaphkana islet, and about half a mile from the shore, is an isolated rock or islet, with only 5 fathoms south-eastward of it.  
30 This islet is only 3 feet high, and is not easily seen from seaward.

- The western shore of Libiadha bay, about a mile in length, is a low sandy beach, off which the depths are moderate, decreasing gradually to the shore in the southern part. In the southern corner of the bay there are two small coves about a cable apart, the eastern one of which  
35 is sheltered from north-easterly winds by the land, and can be used by small craft in all weathers, Kaphkana islet, with the shoal water round it, giving some protection from more northerly winds and seas. The depths are from 2 to one fathom, and the bottom is sandy and clear of dangers except a few small round boulders. The beach is sand  
40 and shingle and easy of access.

The western cove has a depth of 6 to 4 feet, and is smaller than the eastern, but more sheltered from northerly winds. A reef of rocks awash extends a short distance from its north point, and on the south side is a smooth sloping rock with 3½ feet of water up to it. The

*General charts 1086, 2836b.*

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° 20' W.*

bottom is sand, with large round stones and weed. The beach is sandy, but less easy of access than that of the other cove. In 1916 large quantities of sawn timber were stacked on the beach of Libiadha bay, near by. 5

At about one mile south-eastward of Stavros point, and one cable from the shore, is a rock with less than 6 feet of water on it, with depths of 2 to 3 fathoms in the vicinity. The shore should not be approached too closely.

**Stavros point**, 4 miles north-westward of Kaphkana islet, is bordered by a rocky bank, which extends  $2\frac{1}{2}$  cables from the point. 10

**Beacon**.—A beacon, 30 feet high and painted white, with a top-mark consisting of two triangles placed point to point, is situated on Stavros point.

**Stavros village**.—From Stavros point the coast trends to the west-north-westward for  $1\frac{1}{2}$  miles to the Custom house, close westward of which is good landing and a temporary pier. Stavros village, consisting of about 100 houses and a church with square tower, is built on the slope of the hills, about one mile southward of the Custom house. 15 20

About half a mile beyond the Custom house is the mouth of the Rendina river, spanned by a bridge, the outlet of Lake Beshik, which is about 5 miles inland.

**Anchorage**.—There is good anchorage in 14 fathoms, mud bottom, off Stavros village, with the Custom house bearing  $196^\circ$  true, distant 4 cables, and Stavros point  $120^\circ$  true. 25

**Coast**.—The general appearance of the land between Stavros point and Chai Aghizi, near the mouth of the Struma river on the opposite side of the Gulf of Ruphani, is mountainous and wooded, and it is not until within a few miles of the anchorage off Stavros that the fairly extensive plain between the coast and the foot-hills is apparent. From the Custom house at Stavros the coast sharply turns to the north and north-north-eastward, and is low and sandy for a distance of 6 miles, when it curves to the east-south-eastward for three-quarters of a mile and the character of the foreshore changes to shingle. From this point the coast trends north-eastward again, and, with the exception of a small piece of yellow cliff nearly 3 miles south-westward of Chai Aghizi, is sandy. At Chai Aghizi the coast curves somewhat sharply to the south-eastward, forming a small bay off the village; it then continues east-south-eastward for  $8\frac{1}{2}$  miles to Cape Deutheros, where the sandy beach terminates. The mountain of Pilaf Tepe (*Lat.*  $40^\circ 53' N.$ , *Long.*  $24^\circ 06' E.$ ) rises to 6,143 feet at  $11\frac{1}{2}$  miles north-north-eastward of Cape Deutheros. 30 35 40

*General chart 2836b.*

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° 20' W.*

**Conspicuous objects** between Stavros point and the yellow cliff are Pulpit rock, 423 feet high, a precipitous mass of grey rock on the north side of the gorge of Rendina river; Four tree hill, 1,103 feet high, which is readily distinguished by the four trees on its summit; a conspicuous white house just above the village of Vastra, about 1½ miles north-north-westward of Stavros; a sharp summit, 1,652 feet high, known as "350-metre hill"; and Stonehenge, 1,519 feet high, a remarkable cone-shaped hill, composed mainly of grey rock. Near Chai Aghizi, the square white house above the village, and another white house further to the south-eastward, are the most prominent objects.

**Depths.**—Except off Stavros point, the coast between that point and Chai Aghizi is free from danger, and can be approached with confidence; but as the water shoals very quickly, 20 fathoms being generally found at only 3 cables from the coast, vessels are cautioned not to close the land at night unless certain of their position.

**Winds.**—It is noticed that north-east gales do not always blow home to this coast, as when a strong N.E. gale was blowing at Mudros and Kephalo, a maximum force of 6 was registered at Stavros.

*Plan of the mouth of the Struma R. (Kara su) on 1679.*

**Struma river or Kara su.**—The entrance to the Struma river (ancient *Strymon*) is nearly 9 miles north-eastward of Stavros point, and on the north side of the Gulf of Ruphani, on the eastern side of the small bay off Chai Aghizi, and about 1½ miles south-eastward of that village.

The ruins of Amphipolis, with the remains of an aqueduct and traces of the Acropolis, are still in existence on the left bank of the Struma.

Near the mouth of the river is a Custom house, and the village of Chai Aghizi (*Lat. 40° 47' N., Long. 23° 51' E.*) is situated near the landing place westward of the two lagoons. There is a small pier at the head of the bay by the village, with depths of one to 4 feet alongside. Shoal water under 3 fathoms extends from one to 1½ cables from the shore at the head of the bay.

**Depths.**—The depth over the bar of the Struma river is 4½ feet, and the river is navigable with a least depth of 3 feet to the head of the Takinos lake. The village of Yenikeui is situated about 4 miles from the entrance, and the river is crossed by a wooden pile bridge about one mile below Yenikeui. Between the bridge and Yenikeui the river is encumbered by rapids, where the stream runs about 5 knots. The river at the rapids is from 50 to 100 yards in width, with navigable channels about 20 yards wide. About one mile below the bridge above mentioned there are the remains of an old trestle bridge, the piles of

*General charts 1086, 28366.*

*Plan of the mouth of the Struma R. (Kara su) on 1679. Var.  $3^{\circ}20' W$ .* which form a danger to boats coming down stream. There are three islands between the sea and the old bridge; the channel, which follows the concave side of the banks, and is close to the right bank when passing the first island, has a depth of 11 feet as far as the second island, where the channel is close to the left bank; after the second island there is a difficult crossing to the right bank, and the deep channel abreast the third island is narrow and close to that island. There is a depth of 8 feet at the old bridge when there is  $4\frac{1}{2}$  feet on the bar. A short distance above Yenikeui the river opens up into Lake Takinos, which for a distance of nearly 7 miles is nearly filled with tall reeds, through which there is a navigable channel of about 300 yards in width, with depths of 6 to 9 feet, hard mud. At Wood point the lake presents an open expanse of water as far as Ahinos, where it terminates in an extensive marsh. There is said to be a difference of 5 feet in the depth of Lake Takinos between the highest in April and the lowest in July.

**Anchorage.**—There is anchorage at any convenient depth off the village of Chai Aghizi, and off the river in 16 fathoms, mud, with a building at the entrance bearing about  $16^{\circ}$  true. The sea is, at times, much discoloured by the mud from the river. A surface current at the latter anchorage has been observed to run at the rate of  $2\frac{1}{2}$  miles an hour. Sailing vessels call here occasionally.

**Water** may be obtained at a short distance up the river.

*Chart 1086, Gulf of Kassandra to Thaso, &c.*

**Cape Deutheros** (Lat.  $40^{\circ} 43' N.$ , Long.  $24^{\circ} 03' E.$ ).—Shoal water extends nearly half a mile off Cape Deutheros, which must be given a wide berth in rounding.

*Plan of Deuthero cove on 1679.*

**DEUTHERO COVE (LEPHTERE).**—Cape Brasides, 15 miles east-north-eastward of Cape Deutheros, is the termination of a tongue of land projecting eastward, and has a depth of 4 fathoms close to, on a ledge with 5 fathoms water on its outer part, extending 2 cables from the cape, in an east-north-east direction. On the hill, 200 feet high, nearly  $6\frac{1}{4}$  cables within the cape, is a tower. The entrance to Deuthero cove, or Lephtere, as it is called by both the Greek and Turkish inhabitants of the place, is three-quarters of a mile wide between the north extreme of Cape Brasides and the bluff point on the north. The cove within is nearly oval,  $1\frac{1}{2}$  miles north and south, and nearly one mile east and west, with from 12 to 5 fathoms water, mud bottom, affording a snug anchorage and plenty of room for several ships. Open to the eastward, it is the port of shelter for vessels at Kavala in southerly winds; in the northernmost corner is very good shelter for small craft such as tugs, lighters, &c. There is little or no tide, but the water level is much affected by the wind.

*General charts 1086, 2836b.*

*Plan of Deuthero cove on 1679. Var. 3° 10' W.*

The land at the head of the cove is cultivated, and just within the shore on the south-west is a farm. The village of Deutheropolis, probably the ancient *Nsyne*, is about two-thirds of a mile inland from the middle of the head of the cove, and on the shore east-north-eastward of Deutheropolis are barracks, and a landing place.

At one cable southward of the landing place a small river flows into the cove, and off it are two islets; near the river are 225 small houses, all of the same pattern, which were built to house refugees during one of the recent Balkan wars. The old Turkish fortress of Chiftilik stands on the shore in the south-west corner of the cove.

There is good landing for boats on the beaches round the cove, which are composed of sand and shingle.

There are no local craft of any description except one or two fishing boats. A track which is being made into a road leads from the cove towards a place called Pravishta (Pravi). There is good water supply in the neighbourhood and some wood. A telegraph office is situated northward of the village.

**LIGHT.**—Destroyed (1917).

**Pier.**—There is a substantial wooden pier, about 100 yards long, in the north-eastern corner of Deuthero cove, about  $5\frac{1}{4}$  cables north-north-westward of the light on the north point of entrance.

**Mooring buoys.**—Two large mooring buoys lie sunk, one off the end of the pier, and the other close to the cliffy point  $1\frac{1}{4}$  cables southward of the pier.

*Chart 1086, Gulf of Kassandra to Thaso, &c.*

**Kisilad islet.**—At  $1\frac{3}{4}$  miles north-north-eastward of the entrance to Deuthero cove, and separated from a bluff point by a distance of two-thirds of a mile, is the islet of Kisilad; there are 19 fathoms water between the islet and point, but the shore of the bay north-west of the islet is scattered with rocks.

*Plan of Kavala bay on chart 2836b.*

**KAVALA BAY** (Lat.  $40^{\circ} 55' N.$ , Long.  $24^{\circ} 25' E.$ ).—This bay is 7 miles north-eastward of Deuthero cove, and the lighthouse bears  $305^{\circ}$  true,  $13\frac{1}{2}$  miles from Cape Ommannay, the north point of Thaso island. It is about one mile wide between the points of entrance, and half a mile deep, with from 12 to 6 fathoms water, sandy bottom, and open to the southward.

The head of the bay is formed by two yellow sandy beaches, separated by a rocky point on which is situated a large yellow house, conspicuous from a long distance. In the eastern bight there is a conspicuous house standing close to the eastern extreme of the eastern yellow beach, and a few private residences, while in the western bight

*General charts 1086, 2836b.*

*Plan of Kavala bay on chart 2836b. Var. 3° 10' W.*

the houses are fairly numerous and all of about the same size; the land is slightly cultivated.

The soundings are regular, and gradually decrease from a depth of 13 fathoms in the entrance to the shore, the bottom being of fine sand except near the projecting points, where it is rock. 5

Good landing may be made under favourable circumstances on the beaches in the north-western part of the bay and eastward of the town; near the latter beach are some newly-constructed barracks.

**A rock**, above water, lies nearly 2 cables southward from the western point of entrance; another rock, 15 feet high, lies three-quarters of a cable south-westward of the lighthouse point. 10

**LIGHT.**—A light is shown, at an elevation of 148 feet, from a white wooden framework on the walls of a castle on the east entrance point of the bay, 164 yards from the extreme of the point. 15

**The best anchorage** for a ship of heavy draught is in 11 fathoms over black mud, with the house on the rocky point between the beaches bearing 325° true, and the lighthouse bearing 85° true. Small coasting vessels anchor in a bight under the walls of the town on the eastern side of the bay. Strong southerly winds bring in a heavy sea, stop all landing, and render the anchorage unsafe in summer until these winds subside. 20

Shelter from southerly winds can be obtained in Deuthero cove.

**Kavala town** (ancient *Neapolis*) (*Lat. 40° 55' N., Long. 24° 25' E.*). —The old town (the Mohammedan quarter) occupies a rocky promontory, the houses rising one above the other to the summit, on which is an ancient fortress; the whole is encircled by old walls still in fair preservation; the new town stands on the slopes along the beach, the houses being mostly of stone, and modern. The promontory is connected to the mainland by an isthmus, over which a fine Roman aqueduct conveys water from the hills to the inhabitants, but the supply is insufficient for their needs. 25 30

The sanitary condition is said to be bad.

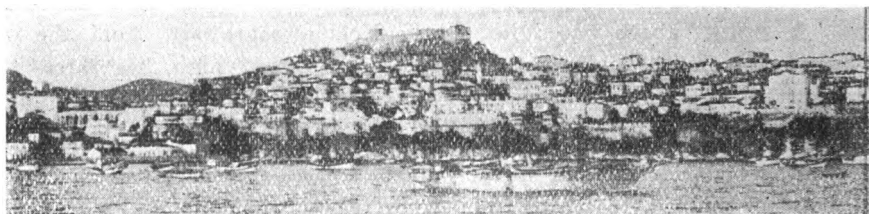
Kavala, with a population in 1916 of about 24,000 Greeks and Turks, is a thriving town, and possesses an important Mohammedan school, richly endowed by Mohammed Ali of Egypt, who was born at Kavala. There is a short mole and quay in the eastern corner of the bay, where the Custom house is. Small lighters discharge, two at a time, alongside this mole, but it is reported that the depth alongside is only 2 feet at low water. There are two small hand cranes on the mole, capable of lifting about one ton. Another stone pier is in the north-eastern corner of the bay, alongside which the small local caiques lie. There is a short mole and a landing place for boats in the centre of 40

*General charts 1086, 2836b.*

*Plan of Kavala bay on chart 2836b. Var. 3° 10' W.*

the town, about half a mile northward of the lighthouse point, and about the centre of the bay is a substantial wooden pier.

- The name of Philippi survives in that of Felibejik, a ruined Turkish hamlet, situated on the border of a marsh south-east of the site of Philippi. The principal remains of Philippi are situated three-quarters of a mile westward of Bereketli, a village 7 miles east-north-eastward of Kavala.



General view of Kavala.

- Communication.**—One Greek line of steamers calls weekly.  
10 Kavala is a telegraph station.

- Trade.**—The principal article of export is tobacco; the chief articles of import being flour, maize, sugar, iron goods, cotton goods, sacking and cotton yarns. The tobacco is grown in the neighbourhood in large quantities, and of a good quality. In 1906 the exports were  
15 valued at £1,120,000; and the imports at £366,334.

**Shipping.**—In 1906, 278 steam vessels, of 256,579 tons, and 1,740 sailing vessels, of 17,488 tons, entered the port; of these none were British.

*Chart 1086, Gulf of Kassandra to Thaso, &c.*

- 20 **Coast.**—From Kavala bay (*Lat. 40° 55' N., Long. 24° 25' E.*) a low sandy shore trends east-north-eastward about 5 miles to Chebend kioi, and about one mile further east turns to the south-south-eastward for 7 miles to Koan point (page 297), the north point of the west  
25 entrance to Thaso strait. At the back of this latter part of the coast, the land is low and swampy, with several lagoons, and during winter is frequently overflowed, so that communication between Kavala and Kalamuti is impeded. From Cape Brasides, the coast is backed by a chain of mountains which run in a north-easterly direction for about 32 miles to Mount Zante, 16 miles from the sea, and 3,815 feet high.
- 30 **Rock.**—A rock, with a depth of 5 feet, is reported to lie at a distance of about 9 cables south-eastward of Chebend kioi and nearly half a mile from the shore to the northward, at  $5\frac{6}{10}$  miles 77° true from Kavala light.

*General charts 1086, 2836b.*







*Karala,*  
bearing  $24^{\circ}$  true.

$38^{\circ}$  true.



*Thaso Pulo,*  
bearing  $74^{\circ}$  true.

*Thaso I.*



*Thaso island.*

Thaso strait.—Western entrance ; 3 views.

*Cape Kephala,*  
bearing  $128^{\circ}$  true, 12m.

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° W.*

**Caution.**—Considerably less water than is shown on the chart is reported between Chebend kioi and Koan point. Care should be taken when navigating these waters, as the amount and extent of the changes are not known.

5

**THASO** is the most northern of the Ægean islands, and is somewhat circular in form, being 14 miles north and south and 12 miles east and west; it is mountainous, more particularly on the eastern side, where Mount Ipsario, the highest peak, is 3,428 feet above the sea. The island appears to be a mass of marble covered with trees, chiefly fir, and some small oaks, but none of any size. With its full clear streams, its pine forests, its exquisite woodlands, and its grey limestone cliffs, it is one of the most beautiful islands in the Ægean.

10

The produce consists mainly of maize or Indian corn, tobacco, and vegetables; sheep are small, but cattle large. The island is rich in iron, silver, copper, antimony, and zinc. In ancient times, extensive gold mines are said to have been worked; and in the present day large quantities of calamine zinc ore are exported, 20,000 tons having been exported in 1906. Tin is also reported to exist in the island. Good potter's clay is found in the northern districts, but the local potteries have decayed. The production of honey, once of importance, has also declined in recent years.

15

20

The population amounts to 13,050, all Greeks, dispersed in some 10 villages. The capital is Panagia (*Lat.* 40° 44' N., *Long.* 24° 44' E.), in the north-eastern part of the island.

25

**Telegraph.**—A cable connects Thaso with the mainland at Koan point, and thence by land line with Kavala.

*Plan of Thaso strait on 1679.*

**THASO STRAIT** is formed between Thaso island and the low shore of the plain of the Nestus on the north, and in the narrowest part, between Cape Ommanney and Koan point, is 3½ miles wide. Nearly in the middle of the strait is Thaso Pulo, an islet nearly one mile in length north-west and south-east, 355 feet high, and steep to all round. There are no isolated off-lying dangers in the strait, the general depths being from 13 to 17 fathoms, sand or mud.

30

35

*See views opposite.*

**Current.**—A current generally sets westward through Thaso strait, and also southward of Thaso island; during southerly winds, the stream from the Dardanelles being diverted from its usual course and striking the peninsula of Akte, is forced to the north-east and eastward along the coast of Rumelia, when the current in the strait has been found setting eastward at the rate of half a knot to 1½ knots an hour. *See page 294.*

40

*General charts 1086, 2836b.*

*Plan 1684, Panagia road. Var. 3° W.*

**PANAGIA ROAD**, on the north side of Thaso island, affords good anchorage in 9 or 10 fathoms, with Escombe point, the south-east extreme of Thaso Pulo, bearing 18° true, and Wellings point, the eastern point of the roadstead, 117° true, or as convenient. Small vessels can anchor in about 7 fathoms, 2½ cables north-westward of the harbour entrance, with Wellings point bearing 74° true. A swell from the eastward often sets in, proportionally to the force of the wind.

The temperature at this anchorage in July has been noted to be nearly 10° higher than at Bashika, probably due to the radiation from the marble, and the nights are intensely hot.

**Current in the road.**—While a fleet lay in the road in September, 1893, the current in the outer part was running to eastward, while at the same time the ships anchored near Thaso island had a current to the westward. See page 293.

**Wellings point** (*Lat. 40° 47' N., Long. 24° 44' E.*) has shoal water extending half a cable from it, and a bank, known as Bullmore patch, lies with its shallowest depth of 7 fathoms, rock, 4 cables north-north-eastward from the same point.

**Limena.**—The town of Limena, the port of Panagia (*see* page 293), lies nearly half a mile south-west of Wellings point; it is situated in a natural amphitheatre, facing north-west, and surrounded by olive gardens and pasturage. Limena has become of increasing importance during recent years, and is now the chief place in the island. Between Wellings point and the town there is a small artificial harbour, with a depth of 2 feet. There is also a pier at the town. It is stated that there are two small harbours.

The place is subject to torrential rains in the wet season.

Steamers run to Kavala two or three times a week.

**Water** may be obtained from a stream westward of an old tower, either by landing casks and rafting them off, or with a long hose and engine. The town has good spring water.

**Cape Ommanney** is 3 miles west-north-westward of Wellings point. The cape itself is fairly steep-to, but from the shore 4 cables south-west of it a bank extends off the same distance, with depths under 5 fathoms. Not more than 9 fathoms will be found nearly half a mile north of Cape Ommanney. Between the latter and Wellings point the shore is fringed by shoal water, extending off 1½ cables.

*Chart 1086, Gulf of Kassandra to Thaso, &c.*

**Coast.**—From Cape Ommanney, the coast trends south-westward for about 5½ miles, then turns to the south-south-west for 6½ miles to the western point of the island, from whence the coast curves to the

*General charts 1086, 2836b.*

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° W.*

south and south-south-eastward for about  $2\frac{1}{2}$  miles to Cape Kephalo, the south-west point. The southern extreme of Thaso is known as Cape Kokkina or Salonikios, and bears  $122^\circ$  true, distant  $6\frac{1}{4}$  miles from Cape Kephalo, the coast between forming three bays. 5

**Volgaro** pier is situated about 2 miles west-south-westward of Cape Ommanney; in the neighbourhood are several mines.

**Sotiros.**—A loading place is situated on the north-west coast of Thaso island, about  $6\frac{1}{4}$  miles from Cape Ommanney, and connected by a railway with the village of Sotiros or Cavamith. A pier is situated here for loading ore from sheds, off which vessels can anchor within 2 cables. 10

For ships coming from the south-west the mines and the railway lines are easily recognised.

The shoals on the coast between Sotiros and Cape Kephalo are easily recognisable by the light green colouring of the water. The roadstead is protected against south and east winds. 15

Drinking water can be obtained in very small quantities, otherwise nothing is to be obtained.

**Hamidieh or Kastro bay** is situated on the south-west side of Thaso island, between Cape Kephalo and a point nearly 4 miles to the south-eastward, between which points it falls back  $1\frac{1}{2}$  miles. Hamidieh, formerly called Kastro, is situated at the head of the bay, nearly three miles eastward of Cape Kephalo. It is a chief shipping place for ore, which is obtained to the north-east of the village from mines lying close to the coast. The whole mining establishment was in German hands. 20 25

The village of Hamidieh (*Lat.  $40^\circ 37' N.$ , Long.  $24^\circ 35' E.$* ) lies in the low land immediately on the shore, whence also the hinterland gradually ascends. Eastward of this flat shore is a steep wall of rock, projecting southward, upon which a house stands, which forms a good landmark. Further eastward this high point recedes and forms a small bay, where the mining establishments are situated. To the east of the mining establishment on the highest hill stands a conspicuous powder-house. 30 35

Hamidieh is the skala of the poor village of Kastro, about 3 hours distant to the north-east.

**Piers.**—Two iron piers are built into the sea near where the mining establishments are situated. They serve for shipping ore into lighters. The piers are connected with the sheds for the storage of ore by railway lines. The lighters are from 12 to 10 tons capacity. The western pier is 18 feet above water, with a depth of about 4 feet at the end, and has a crane for moderately heavy weights; the eastern pier is 5 feet above water. 40

*General chart 2836b.*

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° W.*

There is a fairly substantial stone pier at the village with about 3½ feet of water at the end, stony bottom. Just east of this is a wooden pier in fair condition with about 3 feet at the end; it affords  
5 fair landing at times when the stone pier does not, but care is required in approaching, as the eastern side of the cove in which it is situated is blocked by large rocks.

With strong southerly winds it is frequently impossible to land at the village, but with anything except strong westerly winds, which  
10 are very infrequent, landing can always be obtained in Botos bay, just south of Hamidieh bay, whence a fair track leads to Hamidieh, about one hour's walk.

**Anchorage.**—The roadstead is open, and lies entirely unprotected from south to west-south-west winds, and with strong winds  
15 from these directions it is advisable to leave. Northerly winds, however, prevail, and ships lie well in the roadstead. The coast is steep-to.

The best anchorage is in the vicinity of the pier, in about 6 to 9 fathoms (*Lat. 40° 37' N., Long. 24° 35' E.*).

**Mooring buoy.**—A mooring buoy is situated at about 1½ cables  
20 from the end of the western iron pier. It lies in 8½ fathoms water, and affords ample swinging room for any vessel likely to visit the bay.

**Caution.**—Considerably less water than shown on the chart has been reported (1916) in Kastro bay, depths of 4 fathoms being reported on a line joining Cape Kephala and the inner end of Kastro pier. The  
25 depths southward of this line are also reported to be less than charted. Care must be taken when navigating these waters, as the changes in the depths are not accurately known.

**Tugs.**—Two tugs exist, a steamer and a motor-boat. They are used for towing lighters, but the steamer goes twice weekly to Kavala  
30 for mails.

**Quarantine and Customs.**—A ship is boarded on arrival; a certificate of health is demanded, but otherwise formalities are fairly simple.

**Supplies.**—Fresh provisions can be obtained as a rule, but no  
35 other ships' requirements. Water can be obtained from the Mining Company in small quantities, but this must be brought off in the ship's boats. Coal cannot be obtained.

Small works of repair can be carried out in case of necessity by the Mining Company.

40 **Botos or Potos bay**, which bounds Hamidieh bay to the south-east, finds some protection from southerly winds. Anchorage in 7 fathoms.

*General chart 2836b.*

*Chart 1086, Gulf of Kassandra to Thaso, &c. Var. 3° W.*

It is separated from Hamidieh bay by Cape Potos, 190 feet high, which projects about half a mile south-westward, and is  $2\frac{1}{2}$  miles from the south point of the island.

**Panagia island** (Lat.  $40^{\circ} 33' N.$ , Long.  $24^{\circ} 37' E.$ ) lies off the south point of Thaso island. It rises steeply, and is with difficulty accessible, the only landing place being in a small bay on the south side of the island. Two rocks, one 82 feet high, are situated off the S.E. point. The island is now uninhabited, except for birds and rabbits; the little bay abounds with fish, crabs, cuttle-fish, and, in certain months, with oysters.

**Cape Agios Georgios**, the south-eastern point of Thaso, lies 6 miles east-north-eastward of the south extreme of that island; it projects southward, with a bay one mile deep on its west side, and is fringed with rocks. At 4 miles northward is Kynira, a steep-to islet about half a mile long, lying one-third of a mile from a point on Thaso, surrounded by shoal water to a short distance.

At  $2\frac{1}{2}$  miles northward of Kynira is a small islet, Grabusa, 95 feet high, forming the south entrance point of the square-shaped bay of Potamia,  $1\frac{1}{2}$  miles long north and south, a mile deep, and open to the east. The head of the bay is bordered by shoal water extending out about a quarter of a mile, the depths outside being from 6 to 20 fathoms. Potamia skala is on the south shore of the bay, and has anchorage off it; there is a pier at the skala. The town of Panagia is beautifully situated, facing east, about  $1\frac{1}{2}$  miles westward of the north part of Potamia bay; it has an abundant water supply.

On the north side of Potamia bay is Cape Pyrgos (Pirokas), 187 feet high, beyond which is the little harbour of Bathu or Vathy. The coast then trends north-westward about 3 miles to Wellings point, forming a bight, which recedes half a mile with moderate depths.

*Plan of Kalamuti harbour on 1679.*

**KALAMUTI HARBOUR.—Koan point** (page 292), the north point of the west entrance to Thaso strait, is very low, projects to the south-west, and is surrounded by shallow water to a distance of from one to 2 cables; the point, however, may be passed at a distance of a quarter of a mile. The low shore eastward of the point forms a bay upwards of a mile deep, and at the extreme eastern end of the bay,  $3\frac{1}{2}$  miles from Koan point, protected from the south by Kalamuti point, is the little harbour of Kalamuti, called Keremidli by the Turks.

At  $1\frac{1}{2}$  cables north-eastward of Kalamuti point, Inner spit projects northward about half a cable, and the harbour extends  $4\frac{1}{4}$  cables eastward from it, with a width in the inner part of about one cable between the banks on either side, and depths of from 7 to 4 and 5 fathoms.

*General charts 1086, 1087, 2836b.*

*Plan of Kalamuti harbour on 1679. Var. 3° W.*

The north-east side of the harbour is formed by a sand spit, at the south-east end of which is the outlet of a stream proceeding from a marsh and ponds. There are depths of 4 to 5 fathoms close into the  
 5 shore abreast the Custom house, marked by its flagstaff, and also on the eastern side of the spit on the western side of the stream outlet; from this point the sandy beach trends away to the north-westward, but the water close to it is shallow.

On the south side of the harbour, one cable southward of the point  
 10 next eastward of Inner spit, are two round clumps of trees close together.

At Kalamuti (*Lut. 40° 51' N., Long. 24° 43' E.*) there is a short pier, and at about one cable southward of it is a bathing house and pier. The village is composed of about a dozen houses. It is sepa-  
 15 rated from the sand spit on the north-east side of the harbour by the outlet of the stream just mentioned, which is crossed by a small double plank bridge, and is also fordable.

**Shallow banks.**—A depth of 5 fathoms will be found close off Inner spit, and at a quarter of a cable off the two points on the south  
 20 shore to the eastward, also the same depth at half a cable from the bathing-house. From the north-eastern sandy shore of the harbour a shallow bank makes off  $1\frac{1}{4}$  cables, at which distance the depth is only 2 fathoms.

**Anchorage.**—The harbour affords shelter for four ships of heavy  
 25 draught in 7 to 8 fathoms of water, and inshore berths for two smaller vessels in about 6 fathoms, from all winds except those between S.S.W. and West which, however, are not of frequent occurrence. The anchorage, almost the only safe one for large vessels between Saloniki and the Dardanelles, is preferable to that of Panagia road, excepting in  
 30 southerly winds, as at the latter place the varying current with even a moderate breeze causes a considerable sea.

The outer berth, in 8 fathoms, sand and mud, is with Kalamuti point bearing 153° true, and a yellow house at the north end of the village 97° true; at 2 cables further in on the last bearing is another  
 35 berth in 7 fathoms, at 2 cables distance from Inner spit.

There is good shelter close inshore for light craft.

**Supplies.**—The plain is well wooded for about 6 or 7 miles in-  
 land, or to the foot of the hills, and abounds with game, consisting of wild boar, pheasants, partridges, and hares. Provisions are cheap  
 40 and abundant, and fish also plentiful.

*General charts 1086, 2836b.*

*Plan of Thaso strait on 1679.*

**Kara Su point** (*Lat. 40° 51' N., Long. 24° 48' E.*).—At about 5 miles eastward of Kalamuti point is Kara Su point, at the third outlet from the westward of the Kara Su (ancient *Nestus*) river.

The boundary between Greece and Bulgaria is near the entrance of the Kara Su river.

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[For description of Kara Su river and the coast eastward of this locality, *see* page 497.]

*General charts 1086, 1087, 2836b.*



## CHAPTER VII.

COAST OF ASIA MINOR FROM CAPE ALUPO TO HUSSEIN POINT,  
KOS CHANNEL, WITH THE SOUTHERN SPORADES ISLANDS.\*

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VARIATION decreasing about  $8\frac{3}{4}'$  annually.

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*Chart 1667, Rhodes island. Var.  $2^{\circ} 10'$  W.*

**RHODES ISLAND.**—This island, the most eastern of the Ægean sea, is 42 miles in length in a north-east and south-west direction, with an extreme breadth near the middle of about  $17\frac{1}{2}$  miles, narrowing towards the ends. The island is mountainous, with spurs in various directions, the greatest elevations being in the central part, where, about 4 miles from the western coast, Mount Attayaro (ancient *Atabyrius*) (Lat.  $36^{\circ} 13'$  N., Long.  $27^{\circ} 54'$  E.) is 4,068 feet above the sea; about 6 miles south-westward of this mountain, and within  $1\frac{1}{2}$  miles of the coast, is Mount Akramytis, 2,706 feet high. These lofty heights form a mountain barrier between the north-west and south-eastern sides of the island.

Mount Skathi, 9 miles from the southern end of the island, is 1,860 feet high; whilst Mount Kumuli, 8 miles from its northern end, is 1,366 feet high. The island is considered to be nearly equally divided between mountains and plains; from the lofty summits of Attayaro towards the town of Rhodes to the north-east the heights decrease, and the plains expand as the hills diminish. This district, which is cultivated on the sides of the hills and on the level land near the sea, produces wheat, and with better cultivation would yield an abundant crop.

**Productions.**—In the level land along the coast, numerous streams irrigate the ground, which produces corn, figs, olives, lemons, oranges, melons, and other fruits. The richest part of the island is a narrow belt of plain along the north-western coast, from the village of Kalavarda to the town of Rhodes. The eastern side of the island is not generally so fertile as the north-western. Marble is quarried in several parts of the island; coral, with sponges, and excellent fish are found in the surrounding sea. The only beasts of burden are mules and donkeys, there being but few horses.

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\* The south coast of Asia Minor eastward of Cape Alupo is described in Vol. V. of *Mediterranean Pilot*.

*Chart 1667, Rhodes island. Var. 2° 10' W.*

The minerals known to exist in the island are antimony, silver, lead, emery, manganese, copper, and calamine, but they are not worked.

Red-legged partridges and hares are met with on the hills; also woodcocks from November to February.

5

**Population.**—In addition to the town of Rhodes, the island contains about forty-four thinly inhabited villages, the largest containing 1,600 inhabitants. The population of the whole island was estimated, in 1907, to be about 30,000, of whom 6,000 were Turks, 3,000 Jews, and the remainder Greeks; of this number, about 10,000 dwell in the town of Rhodes and its suburbs.

10

**Climate.**—Rhodes possesses an agreeable and healthy climate; during the summer it is never very hot, as a steady north-westerly wind prevails at that season.

**Winds.**—During summer, the prevailing wind is north-westerly, blowing almost with the regularity of a trade. Vessels at this season may anchor off the eastern coast of the island with safety.

15

In winter, southerly winds prevail, bringing with them cloudy weather and thick haze; during this season great caution is required in navigating the channel between Rhodes and Asia Minor.

20

*Plan of town and ports of Rhodes on chart 1667.*

**KUM BURNU or MOLINO POINT**, the northern extreme of Rhodes island, is low and sandy, but steep-to; it has a number of windmills on it. The channel between this cape and the coast of Asia Minor, nearly 10 miles wide, is deep and clear of danger. The current generally sets westward.

25

Landing may be effected in ordinary weather on either side of Kum burnu, and also in Trianda bay, about 2 miles to the south-westward.

**LIGHT** (*Lat. 36° 27' N., Long. 28° 16' E.*).—A light is shown, at an elevation of 52 feet from a mast over white house, about 280 yards from the extremity of Kum burnu.

30

**Colonna rock**, lying about  $3\frac{3}{4}$  cables south-eastward of Kum burnu, and nearly a cable northward of Lazaretto point at the entrance of Tershaneh harbour, received its name from the shaft of a column which formerly stood on it as a beacon. The rock, awash, rises from the middle of a reef, with foul ground extending nearly three-quarters of a cable northward, and about half a cable eastward; between the reef and Lazaretto point there are only 8 feet water.

35

**RHODES HARBOURS.**—The town of Rhodes, about three-quarters of a mile southward of Kum burnu, has two harbours, both artificial, and neither of them fit for large ships.

40

**Tershaneh**, the northern harbour—Port Mandraki of the Greeks, and Porto delle Galeré of the knights—is protected from the eastward

*General charts 872, 2836a, 2606.*

*Plan of town and ports of Rhodes on chart 1667. Var. 2° 10' W.*

- by a mole of ancient construction extending from the shore 500 yards to the north, with the tower of St. Elmo on its extremity, close to which is the site of the Colossus of Rhodes. The two transverse piers  
 5 at the entrance are much out of repair, and the sea breaks over them; the harbour has been allowed to silt up, and its north-eastern corner is very shallow. It is open to the north, and the passage in between the ends of the piers is very narrow; between them there are only 8 feet water, though farther in the depths are 10 to 18 feet.  
 10 On the western shore of the harbour is a stone quay, alongside of which is, however, only about a foot of water; behind the quay is a broad promenade (*Lat. 36° 27' N., Long. 28° 16' E.*).

- The Liman or southern harbour** is protected from the eastward by a mole 300 yards long, extending from the shore at the  
 15 eastern angle of the town, in a northerly direction, and having on its extremity the round tower of St. Angelo, 74 feet high; rocky foul ground extends two-thirds of a cable north-north-westward of this mole. A transverse mole, on the extremity of which are the remains of Arab's tower,\* St. Nicolo of the Knights, extends from the northern  
 20 angle of the city eastward towards the tower of St. Angelo; the harbour thus formed is nearly 2 cables deep, and a little more than a cable wide at the entrance, with from 22 feet water in the entrance to 10 feet near the head, over sandy bottom.

- The harbour is open to the north, but is considered safe as the wind  
 25 seldom blows from that quarter, and does not send in much sea. Small vessels haul within the piers on the western side of the harbour, but the water is very shallow in this space; larger vessels moor with a stern-fast to the eastern mole, which, if the wind sets in from the northward, they are obliged to slack up. Vessels lie here quite  
 30 secure in south-east gales, which is the wind most dreaded on this coast, as it raises a very heavy sea.

- Mooring buoys.**—There are three mooring buoys in The Liman or southern harbour; No. 1 is moored in 14 feet about 180 yards 215°  
 35 true from the lighthouse at the tower of St. Angelo; No. 3 is moored in 16 feet about 130 yards westward of No. 1; and No. 2, the old barrel-shaped buoy, lies nearly midway between them.

- Khatar rocks.**—At 2¼ cables south-eastward of the tower of St. Angelo is the termination of a ridge of black rocks, projecting from the shore in a northerly direction; from the outer end a shoal extends  
 40 a quarter of a mile north-eastward, having on its extreme Khatar rocks, with only 10 feet water over them, and 36 feet close to their outer edge.

\* Arab's tower, formerly a most conspicuous object from the sea, was destroyed by an earthquake in 1864; these are not uncommon, and are often very destructive.

*Plan of town and ports of Rhodes on chart 1667. Var. 2° 10' W.*

To pass northward of Khatar rocks, keep the mosque (standing a little inside of the pier on Lazaretto point) well open northward of the tower of St. Elmo, about 287° true.

**LIGHTS** (*Lat. 36° 27' N., Long. 28° 16' E.*).—A light is exhibited from a white tower, 82 feet high, in Fort St. Elmo, at an elevation of 82 feet above the sea. 5

A light is exhibited, at an elevation of 44 feet, from a white iron support over a white house with a red roof at the foot of St. Angelo tower. 10

**Directions.**—At night, in steering for the anchorage, keep the light on St. Elmo bearing westward of 278° true, until the light on Kum burnu bears 300° true, or until St. Angelo light changes from white to green; a vessel will then be near the summer anchorage. In leaving at night, St. Elmo light should be kept westward of a 278° true bearing, until outside Khatar rocks. 15

**Anchorage.**—During the summer, vessels may anchor in from 72 to 108 feet water, sandy bottom, with the tower of St. Elmo bearing from 273° to 287° true, distant from 2 to 3 cables; in this season no danger is to be apprehended from south-east winds. In the winter season, a vessel should not anchor inside a depth of 25 to 30 fathoms, with the tower of St. Elmo 244° true, distant half a mile; from this position, should the wind blow in, a sailing vessel would be able to proceed to sea on either tack. The bottom in general is loose sand, though here and there are spots of better holding ground. 25

When the wind is strong from the eastward, vessels anchor in Trianda bay, south-west of Kum burnu, or seek shelter in Marmarice harbour.

**Buoy.**—In the above-mentioned summer anchorage a red can buoy marks a depth of 32 feet over the remains of a wreck, about 2¼ cables northward from St. Angelo tower. 30

**Current.**—The current in the roadstead generally sets to the northward, but occasionally it will run south-eastward.

**Rhodes town**, about three-quarters of a mile southward of Kum burnu, has an imposing appearance from the sea. It is built in the form of an amphitheatre, on ground rising gently from the water's edge and is strongly fortified, having a moated castle of great size and strength, and is surrounded by walls flanked with towers. The works were constructed by the knights of St. John, and bear evidence of the same skill as was afterwards exhibited in the fortifications of Malta. See view on chart 1667. 35 40

A highly ornamented Gothic gateway leads from the quay to the town, but on entering, the interior disappoints the expectations raised

*General charts 872, 2836a, 2606.*

*Plan of town and ports of Rhodes on chart 1667. Var. 2° 10' W.*

by the exterior. The streets are narrow and winding, but clean, and mean houses have generally replaced the substantial buildings of the knights. Many of the latter were destroyed by the explosion of a powder magazine in November, 1856; two years afterwards an earthquake completed the destruction. The massive houses in the street of the knights withstood the shock, and, with the hospital and city walls, are now the only remains of the mediæval portion of the city.

10 **Trade.**—The chief articles of export are fruit, sesame seed, leather, wine and spirits, dried fruits, and beeswax; the imports being cotton and woollen goods, cereals and flour, sugar, hardware, tobacco, cattle, coffee, timber, hides, and rice.

15 **The landing place** (*Lat. 36° 27' N., Long. 28° 16' E.*) is on the north-west side of Tershaneh harbour.

**Provisions** are obtainable at moderate prices.

**Water** may be obtained from a fountain near the landing place in the southern harbour; and in Tershaneh harbour, but the supply is limited, and during the summer it sometimes fails entirely.

20 **Shipbuilding and repairs.**—Small wooden vessels for service in the Levant are built here, and uncoppered wooden vessels can be repaired; there are no facilities for repairs to iron vessels.

25 **Communication.**—Rhodes is connected by telegraph cables with Marmarice and Crete, thence to Egypt and Europe. Messages can consequently be sent to all parts of the world.

The telegraph office is open always.

A Greek steamer connects with Smyrna, Khios, Lero, and Alexandria.

*Chart 1667, Rhodes island.*

30 **SOUTH-EAST COAST.**—From the town of Rhodes, the coast trends southward  $3\frac{1}{4}$  miles to Cape Vudhi, being low and rocky, but free from danger 2 cables off. Cape Ladhiko (*Lat. 36° 19' N., Long. 28° 15' E.*),  $4\frac{1}{4}$  miles to the south-south-westward of Cape Vudhi, is a high bold cliff rising to a hill 540 feet in height; between the capes, the land falls back westward, forming Kalitheas bay, which is rather less than a mile deep; the northern part of the bay is clear of danger at a quarter of a mile from the shore.

35 In the southern part of Kalitheas bay, a rocky patch with 2 to 3 fathoms on it, lies nearly one-third of a mile north-north-eastward from the southern point of Kalitheas bay, half a mile northward of Cape Ladhiko, and extends a quarter of a mile northward.

40 From Cape Ladhiko to Cape Archangelo, a distance of 9 miles south-south-westward, the coast is nearly straight, having only a few slight indentations; the northernmost of these, named Aphandos bay,

*General charts 872, 2836a, 2606.*

*Chart 1667, Rhodes island. Var. 2° 10' W.*

between Cape Ladhiko and Cape Vahyah, which is mainly low and sandy, is free of danger except a small 5-fathoms patch half a mile off the beach, and  $1\frac{1}{4}$  miles north-north-eastward of Cape Vahyah. Southward of Cape Vahyah, the coast is low and cliffy with rocks, but clear of danger a short distance off. 5

**Water.**—At 3 miles from the latter cape, and three-quarters of a mile northward of two small islets, is a stream of good water.

**Viglika bay** is the southern portion of a deep indentation in the coast between Cape Archangelo and Cape Agios Milianos; it is open to the north-eastward, but is said to be quite secure in the winter from those winds, which then seldom blow, and send home but little sea. The best anchorage is in the south-western corner, in from 19 to 7 fathoms, mud, well sheltered from the south-east. The shores of this bay are composed of smooth rounded pebbles, which are much used in the island for pavements and roads, and are frequently exported to Smyrna and other places for the same purpose. 10 15

**Water.**—In the northern part of Viglika bay is a ruined castle on a projecting rocky eminence, and near it is a good fountain of water; there is also a considerable stream near the centre of the bay during the winter, but in summer it dries up. 20

*Plan of Port Lindos on chart 1667.*

**PORT LINDOS** (Lat.  $36^{\circ} 06'$  N., Long.  $28^{\circ} 08'$  E.), at about half a mile southward of Cape Agios Milianos, is about  $1\frac{1}{2}$  cables wide at the entrance, opens out within to 3 cables in width, and is  $3\frac{1}{2}$  cables deep, with two bights at the head, north-westward and south-westward; it forms a snug little anchorage in from 6 to 4 fathoms water, well sheltered from all winds but those from E.S.E. 25

**Shoal.**—At the entrance of the northern bight is a narrow shoal, nearly a cable in length, with  $2\frac{1}{2}$  fathoms on it. 30

In former times, when this place had a trade of its own, the vessels belonging to it used to winter in Viglika bay.

The town of Lindos, half in ruins, lies on the northern and western sides of a rocky hill rising from the southern shore of the port; it was once celebrated for a temple of Minerva, of which only the foundations are left; there is also a portion of a theatre that has been hewn out of the rock. 35

*Chart 1667, Rhodes island.*

**Pendi nisia.**—**Shoal.**—A small islet, with foul ground around, called Pendi nisia, lies about  $1\frac{1}{4}$  miles southward of Port Lindos, and nearly in the middle of the entrance of a rocky bay; a rocky patch with  $5\frac{1}{2}$  fathoms on it, and very deep water close to, lies three-quarters of a mile east-south-eastward from the islet. Mount Lindos, about 40

*General charts 872, 2836a, 2606.*

*Chart 1667, Rhodes island. Var. 2° 20' W.*

2½ miles north-westward of the cape of the same name, in line with Pendi nisia, leads over the patch.

- CAPE LINDOS or LARDOS**, 3 miles southward from Cape Agios Milianos, has a ruined tower on its summit, and three small islets lie about a third of a mile northward of it.

**Paximada rock**.—At a little more than 2 miles southward of Cape Lindos is Paximada rock, high and steep-to all round, except on the east side, where there is a sunken rock.

- 10 **Lardos bay**.—The coast turns sharply to the west-north-westward for 2 miles from Cape Lindos, and then curves northward and round south-westward, forming Lardos bay, where from a depth of 20 fathoms, at a long half-mile from the shore, the water shoals gradually in, but the bay is open from S.W. to S.E.
- 15 At 1½ miles north-eastward of Merminga, the western point of the bay, a sunken rock with less than 6 feet on it lies a quarter of a mile southward of a projecting point.

- Coast**.—From Merminga, the western point of Lardos bay, the coast trends south-westward to Cape Vigli, distant 10 miles, and then gradually round west-south-westward for 5 miles to Cape Praso nisi.

- Shoals**.—The whole of this coast is clear of danger, excepting a rock with less than 6 feet water over it, lying a quarter of a mile southward of Cape Vigli; and a small patch of 2½ fathoms, nearly two-thirds of a mile eastward from Cape Katabia, 2½ miles from the south-eastern part of Cape Praso nisi, and nearly half a mile off-shore. To avoid the shoal, keep the western extreme of the latter cape open of the point eastward of it.

- Khina rocks**, lying 100° true 7½ miles from Cape Praso nisi, are two in number and steep-to all round; but, being very low, are dangerous at night.

**CAPE PRASO NISI** (*Lat. 35° 52' N., Long. 27° 47' E.*), the south-western extreme of Rhodes island, is a rocky irregular peninsula connected to the main by a low sandy isthmus, which causes it to be often mistaken for an island.

- 35 **LIGHT**.—A light is exhibited, at an elevation of 213 feet above the sea, from a lighthouse 164 yards within the extremity of Cape Praso nisi.

- Rocky banks**.—A rocky bank, with depths of from 16 to 46 fathoms, is reported to be situated about 10 miles to the south-eastward of Cape Praso nisi.

A deep rocky bank extends from Cape Praso nisi in a 209° true direction for a distance of 8 miles; the body of the bank has a depth of

*General charts 872, 2836a, 2606.*

*Chart 1667, Rhodes island. Var. 2° 20' W.*

from 50 to 70 fathoms, coral, sand, and gravel, deepening to 90 fathoms at the outer end, when it suddenly increases to 150 fathoms over yellow mud.

**Current, Caution.**—A current sets over this bank in a north- 5  
westerly direction at the rate of three-quarters to  $1\frac{1}{2}$  knots an hour, causing during N.W. winds a hollow cross sea, which is dangerous to deeply-laden small vessels.

**South-west coast.**—From Cape Praso nisi the coast trends 10  
north-westward 4 miles to Cape Karavolos, then northward 10 miles, when it takes a north-westerly direction to Cape Monolithos, which bears  $353^\circ$  true,  $12\frac{3}{4}$  miles from Cape Karavolos, forming between them the bay of Palatshah or Apolakia, about 3 miles deep.

There are two rocky islets lying in the vicinity of Cape Karavolos ; 15  
one, of the same name as the cape, lies three-quarters of a mile west-south-westward from it, the other, Octonya nisi (*Lat.  $35^\circ 59' N.$ , Long.  $27^\circ 44' E.$* ), having rocky ground running off its south-western end, lies 3 miles northward from the cape and  $1\frac{3}{4}$  miles off-shore. With the exception of these islets, the bay of Apolakia is clear of danger, 20  
with soundings gradually decreasing towards the beach, from about 60 fathoms.

**KHALKIA ISLAND**, the south-eastern point of which lies nearly 5 miles north-westward from the north extreme of Cape Monolithos, is the most western of a group of islands and rocks extending 25  
westward from between Capes Monolithos and Kopria, the salient points on the north-west coast of Rhodes island, which are about  $9\frac{1}{4}$  miles apart.

Khalkia island,  $5\frac{1}{4}$  miles in length east and west, and  $1\frac{1}{2}$  miles in breadth, is high, rugged, and barren, with a peak one-third from its eastern end, 1,954 feet above the sea. 30

On the south side of the island, about  $1\frac{1}{2}$  miles westward of the south-east point, a peninsula half a mile broad extends 6 cables southward, ending in Trakhia point. It is connected with the island by a narrow isthmus, immediately above which is a castle 1,000 feet above the sea. The village of Khalkia lies northward of the castle and below 35  
it ; some ancient ruins are situated between the village and the highest peak of the island.

On the north-west part of the island is a tower, situated nearly half a mile south-eastward of Cape Kephalo, the north-west point, and one cable from the west coast. The island is steep-to, there being no 40  
dangers outside one cable from the shore.

The population is about 2,500, mostly sponge fishers.

**Emporio bay** (*Lat.  $36^\circ 13' N.$ , Long.  $27^\circ 39' E.$* ).—On Khalkia island are two villages, inhabited by sponge divers and their families,

*General charts 872, 2836a, 2606.*



*Chart 1667, Rhodes island. Var. 2° 20' W.*

- and it possesses a small harbour at the south-eastern part named Emporio bay, protected from the eastward by an island 257 feet high, in the middle of the entrance, having on both sides a passage with deep  
 5 water. There are 20 fathoms at the entrance, inside the island, decreasing to 7 fathoms off the landing place, where small vessels lie quite secure. The harbour is difficult of access during westerly winds, which rush down in squalls from the high hills with which it is surrounded.

- Communication.**—Steamers of the Pantaleon Company call  
 10 weekly from Rhodes.

- Alimnia island**, the next in extent to Khalkia, and  $3\frac{1}{4}$  miles east-north-eastward of that island, is 900 feet high, and possesses a harbour on the south-western side, which, although very deep, has anchorage in 8 to 10 fathoms, off a small village at its head. A spit  
 15 with 3 fathoms water on it, extends 3 cables north-eastward from the eastern point of the entrance; a rock, with a sunken one outside it, lies close to the western point of entrance.

- Tragusa islet.**—Between Khalkia and Alimnia are several islets, the largest being Agios Theodoros, 320 feet high, and nearly half-way  
 20 between them and the coast of Rhodes are three others; they are all bold-to excepting Tragusa, 195 feet high, lying  $1\frac{1}{4}$  miles southward of Alimnia, and which has a patch of rocks with less than 6 feet of water on them and shoal water round it,  $2\frac{1}{2}$  cables south-westward of its southern extreme.

- A rock**, awash, with shoal water around it, also lies about a quarter of a mile westward of the little islet of Nisaki, the second islet from the southward.

- Strongilo, an islet 245 feet high, lies about 3 miles eastward of the south point of Alimnia, and three-quarters of a mile from the coast  
 30 of Rhodes island, with deep water between; and half a mile north-north-westward is Makri islet, a mile long north-north-east and south-south-west with a very small islet off its south-west end.

- Supplies.**—Neither water nor supplies of any kind are to be obtained at any of this group of islands.

- North-west coast.**—Between Cape Monolithos and Cape Kopria (*Lat. 36° 16' N., Long. 27° 51' E.*), the coast of Rhodes is high and rocky, but steep-to; on the high land above Cape Kopria are the ruins of an old castle, 503 feet above the sea, and near the shore mid-way between the capes are two round towers  $1\frac{1}{4}$  miles apart. The  
 40 coast is backed at  $1\frac{1}{2}$  miles, and about 4 miles inland, by the lofty heights of Akramytis and Attayaro, before mentioned.

From Cape Kopria to Kum burnu, a distance of about 23 miles, the shore is a sandy beach, with depths of 5 fathoms from a quarter to

*General charts 872, 2836a, 2606.*

*Chart 1667, Rhodes island. Var. 2° 30' W.*

half a mile off; it maintains nearly the latter distance for several miles from a point about 5½ miles north-eastward of Cape Kopria, and within the shore is a narrow belt of plain, well cultivated.

During the summer the wind blows strong along this part of the coast from W.N.W. with but little interruption. 5

*Chart 2836a, Archipelago, southern portion.*

**Sterneck deep.**—Almost the greatest depths of the Mediterranean have been found 20 miles from the south-east coast of Rhodes island, and the above name has been given to a depression of 2,113 fathoms, yellow clay bottom, situated 143° true, distant 27 miles from Kum burnu, the north-east extremity of Rhodes island. 10

**CYCLADES.**—The islands of Saria, Scarpanto, and Kaso are the southern of the ancient *Cyclades*; they lie midway between Rhodes and Crete, and have on either side wide and deep channels leading into the south-eastern part of the archipelago. The inhabitants are principally Greeks, but the islands belong to the Ottoman empire. 15

*Chart 2824, The islands of Scarpanto and Kaso.*

**Saria island.**—Cape Paraspori (*Lat. 35°54' N., Long. 27°15' E.*), the northern extreme of Saria island, the most northern of the group, is distant 26 miles 274° true from Cape Praso nisi, the south-western extreme of Rhodes island, the channel between being known as Scarpanto strait. Saria island is nearly 4½ miles in length in a north and south direction, and from two-thirds of a mile to more than 2 miles in breadth; the southern part rises to a height of 1,853 feet, and the southern extreme is at the end of a narrow tongue which projects two-thirds of a mile southward, on the east coast. 20 25

The eastern coast of the island is composed of very high cliffs, with deep water close in; there is one small break in this wall, about 1½ miles from Alimúnti, the north-eastern point, which is a little sandy bay surrounded by ancient ruins named Palatia. The western side of the island is not so cliffy as the eastern, and has several indentations, but the deep water is close in to the shore. 30

Prassu-nisi, a small islet, lies 1¼ miles west-north-westward from the south extreme of Saria, and about 1½ cables from the shore, with a sunken rock and one above water between. Eastward of this islet and on the west side of the narrow tongue of land previously mentioned, a bay, the sandy north-east corner of which is named Armyro, extends half a mile north-eastward, with a width at the entrance of upwards of that distance. The bay has deep water except close to the shore, and at the head, on the west side, a bank with 5 fathoms on it extends off one cable. Westerly winds blow right into the bay. 35 40

*General charts 872, 2836a, 2606.*

*Chart 2824, The islands of Scarpanto and Kaso. Var. 2° 30' W.*

**SCARPANTO ISLAND** (ancient *Carpathos*) is only separated from Saria by a shallow channel about 100 yards wide, which on the western side suddenly opens out, forming the bay mentioned above.

- 5 Scarpanto is about 26 miles in length in a north and south direction, and from about 2 to 6 miles in breadth. A ridge of high mountains extends the whole length of the island, many of the spurs and ravines of which descend to the coast; the highest peak, Mount Kalolimni, about  $11\frac{1}{2}$  miles from the southern end of the island, rises to a height  
10 of 4,000 feet. The greater portion of the inhabitants, numbering about 8,000, mostly Greeks, reside in nine villages, well up the mountains, at the southern part of the island.

**Communication.**—Steamers of the Pantaleon Co. call fortnightly from the adjacent islands.

- 15 **East coast.**—The northern half of the east coast of Scarpanto principally consists of high cliffs, with numerous indentations. Rocks and shoal water front a large portion of it, extending in several places upwards of half a mile from the shore; the southern portion of the coast is bolder, and deep water comes close up to the cliffs. On the  
20 south-eastern side are three open bays named Pegádia, Amorphos, and Makri Yalo, in either of which vessels might find shelter from northerly or westerly winds, in a moderate depth of water, about one-third of a mile from the shore.

- Pegádia bay** (*Lat. 35° 31' N., Long. 27° 14' E.*), on the northern  
25 side of Vuthia peninsula (the south-eastern extreme of the island), is about 10 miles from Castello point, the south extreme of Scarpanto, and is open to north-east and easterly winds. In the southern part of the bay are several little islets, and a skala or landing place, with some ruins near it. There are a few houses and a small Greek church in the  
30 southern part of the bay, and a small protected nook or boat-harbour is used by native craft in the sandy bight eastward of the skala. At  $1\frac{1}{2}$  miles inland on the mountain south-west of the bay is Menites, the largest village on the island.

- This bay affords excellent protection during the strong north-  
35 westerly winds which occur during the summer months. The soundings shoal regularly from 16 fathoms, towards the beach; H.M.S. *Sylvia* anchored in 10 fathoms, dark muddy sand, with the following bearings: Vrontos point, 32° true, Vuthia point, 132° true, and the inner rocky islet, 173° true.

- 40 **Supplies** of fresh meat and fruit may be obtained.

**Amorphos bay**, 2 miles further southward, is quite open to south and easterly winds;  $1\frac{1}{2}$  miles farther southward and 4 cables off-shore is Prassu-nisi, surrounded by rocks and shoal water.

*General charts 872, 2836a, 2606.*

*Chart 2824, The islands of Scarpanto and Kaso. Var. 2° 30' W.*

**Makri Yalo bay**, the southern of the above anchorages, is nearly 3 miles north-eastward of Castello point. In making for this bay from the southward, give Legi point, the southern extreme of the bay, a berth of half a mile, and the coast between it and Castello point a berth of three-quarters of a mile, to clear the shoal patches extending from the shore; the bay is quite open to the eastward. 5

*Plan of Tristoma on chart 2824.*

**TRISTOMA HARBOUR** (*Lat. 35° 49' N., Long. 27° 14' E.*).

—On the west side of Scarpanto, and half a mile from its northern extremity, is the small harbour of Tristoma, running in east about three-quarters of a mile, and  $1\frac{1}{2}$  cables in breadth, with a depth of from  $4\frac{1}{2}$  to 9 fathoms water. In the entrance are two islets, and the channel into the harbour, which is only 170 feet wide, is southward of South islet, the two northern channels only admitting boats (*see view on chart 2824*). Just inside the narrowest part of the entrance is a bar with  $4\frac{1}{2}$  fathoms most water over it. On the slopes of the mountains on either side the ground is terraced and cultivated. There is a considerable village on Fishery point, on the north side of the harbour. 10 15

It has been reported that the narrow entrance channel between Tristoma bluff and South islet is dangerous and sometimes impracticable, especially for leaving the harbour when a *maestrale* (north-west wind) is blowing, on account of the heavy breaking sea and the current. 20

Local sailors say that from June to the middle of September, when the *maestrale* blows continuously, the harbour is closed to traffic. In March, April, and May the *maestrale* also blows with violence for varying periods; caution is therefore necessary to avoid being weather-bound inside. 25

**Water.**—At the head of the harbour are two springs of water, that on the north is drinkable, but the southern is slightly brackish. 30

The northern spring is reported to be nearly dry, there only remaining an uncovered ditch with a limited supply of fresh water. The southern and brackish spring is also uncovered; its water is drunk by cattle.

*Chart 2824, The islands of Scarpanto and Kaso.*

**Vurgúnda point.**—At nearly  $2\frac{1}{4}$  miles west-south-westward from Tristoma harbour is Vurgúnda point, on the eastern side of which is a small bay open to the northward. On the western side of the bay is a village, and a pier runs out some distance from the shore. A little islet lies on the eastern side of the entrance. 35 40

**West coast.**—The coast from Vurgúnda point to So Kastro, an islet close to the shore, and united by rocks to the elbow or western extreme of Scarpanto, a distance of  $13\frac{1}{4}$  miles, has deep water all along .

*General charts 872, 2836a, 2606.*

*Chart 2824, The islands of Scarpanto and Kaso. Var. 2° 30' W.*

close to the shore; the northern part consists in places of high cliffs, with depths of more than 100 fathoms nearly alongside them. Southward of the steep cliffs the coast is sinuous and skirted with rocks.

- 5 At about 9 miles south of So Kastro islet is the clifly Cape Agios Theódoros (*Lat. 35° 27' N., Long. 27° 06' E.*); the coast between falls back nearly 2 miles, and is irregular, with clifly projections, skirted by rocks, and about midway the 100-fathoms line of soundings is a mile from the shore. At 2 miles north-eastward of Cape Agios Theódoros
- 10 is Paleo Kastro point, the extremity of a peninsula projecting about half a mile from the line of coast. Northward of the peninsula is a clifly indentation, and at the north and south extremes of this indentation are respectively the little bays of Phineki and Arkása, with anchorage for small vessels.

- 15 In Arkása bay there is a village with about 500 inhabitants. Both these bays are open to the westward.

On the southern side of the peninsula is a bay where a small vessel might anchor with off-shore winds in from 10 to 6 fathoms. The little islet of Khalkyas lies at the entrance.

- 20 **DANGERS.**—**Carpatho rock**, with less than 6 feet water on it, and 15 to 20 fathoms close round, lies with the centre of the patch bearing 282° true,  $1\frac{1}{2}$  miles from the south extremity of Cape Agios Theódoros, and  $1\frac{3}{4}$  miles east-north-eastward from Strongilo-nisi, off the east extreme of Kaso; it is thus nearly in the middle of the channel
- 25 between Scarpanto and Kaso islands. To avoid this danger keep over towards the north-eastern point of Kaso island, which with Strongilo-nisi, the islet close off it on the north, has deep water close to.

- Two-fathoms patch.**—Another patch, with 2 fathoms water on it, lies north-westward distant about 4 cables from the northern
- 30 extreme of Cape Agios Theódoros. Great caution is therefore required in rounding the cape.

- Castello point.**—From Cape Agios Theódoros the coast, which is irregular and rocky, trends south-eastward and terminates at the distance of  $3\frac{3}{4}$  miles in the peninsula point of Castello, the southern
- 35 extreme of Scarpanto, already alluded to. On the north-western side of Castello point is Castello bay, with from 20 to 10 fathoms water, and where shelter might be had from northerly or easterly winds; the bay is open to the south-west, but is slightly protected from the westward by Kaso island, about 6 miles distant in that direction. The
- 40 100-fathoms line of soundings passes about a mile southward of Castello point, and between this and a little northward of Paleo Kastro the bank, with less than 100 fathoms on it, extends to about  $3\frac{1}{2}$  miles westward of Kaso island.

*Chart 2824, The islands of Scarpanto and Kaso. Var. 2° 30' W.*

**KASO.**—This island (ancient *Kassos*),  $9\frac{1}{2}$  miles in length in an east-north-east and west-south-west direction, and  $3\frac{3}{4}$  miles in extreme breadth, is separated from Scarpanto by a channel 3 miles wide, but which is interrupted in the middle by Carpatho rock, just mentioned. 5  
The island, 1,700 feet high, is very mountainous on the south-east and south-western sides, sloping towards the north-west, in which part most of the villages are situated; the population is about 7,500, nearly all Greeks. The shores of the island principally consist of high rocky cliffs with deep water close to. Agios Georgio point (*Lat. 35° 25' N., 10 Long. 26° 56' E.*), the north-western extreme, is bordered by shallow water, and at one-third of a mile off there are only 5 fathoms. Close off the south-western end are Plati and the two Kurekia islets, the latter being nearer to the coast.

At a third of a mile north of Kavo Aktis, the north-eastern end, is Strongilo-nisi, less than 2 cables in length; a little more than 2 miles westward of it is the rock or islet of Kholophonos, about half a mile from the coast. 15

Kaso island suffered severely from the effects of the Greek revolution, and became nearly depopulated, but has now recovered, and the inhabitants have some trade. 20

**Communication.**—The Pantaleon Co. steamers call here from Smyrna and the neighbouring islands every fortnight.

**The islets of Kaso** are a group of islets extending over a distance of  $4\frac{1}{4}$  miles, and nearly parallel to the north-western side of Kaso island; the channel between is from  $1\frac{1}{2}$  to 3 miles wide. Good anchorage may be found under the islets sheltered from N.W. winds; the best place is off the middle of the long flat islet of Makro nisi, at the north-eastern end of the group, in from 10 to 12 fathoms water, over sand. 25

From this anchorage Ophris village, on the shore of a small bay eastward of Agios Georgio point, the north-western extreme of Kaso island, is nearly 2 miles distant; it is difficult to land at Ophris with northerly winds. 30

**Kaso rock**, with  $2\frac{1}{2}$  fathoms on and deep water round it, lies nearly in the middle of the western part of the channel between Armathia, 348 feet high, the largest of the Kaso islets, and Kaso; it lies nearly a mile southward of Armathia, and 215° true about  $11\frac{1}{2}$  cables from the south-eastern extreme of that islet. 35

Kholophonos islet, in line with the north-western part of Agios Georgio point, 73° true, leads 2 cables southward of Kaso rock. 40

**Armathia shoal**, with 4 fathoms water on it, lies 6 cables southward of the centre of the little islet united by rocks to Plato nisia (or the third islet of the group from the westward). There are other

*General charts 2836a, 2606.*

*Chart 2824, The islands of Scarpanto and Kaso. Var. 2° 30' W.*

shoal patches and detached rocks around and between the islets, but they will be avoided by keeping on the Kaso island side.

**STAKIDA** (*Lat. 35°53' N., Long. 26°51' E.*).—This group of four islets extends over a space of  $2\frac{1}{4}$  miles north and south, the largest, named Stakida, being about 200 feet high. Seal islet, the northernmost, is small, and lies one mile north-north-eastward from Stakida; and the southern islet, Stakidapulo, is the second largest, and lies  $1\frac{1}{2}$  cables southward of Stakida; they are steep-to, and lie nearly mid-way and a little northward of a line between Unia nisia and the northern end of Saria, distant from the latter about  $18\frac{1}{2}$  miles westward.

*Charts 872, 2836a.*

**SCARPANTO and KASO STRAITS** are the great channels into the archipelago from the eastern part of the Mediterranean; the former, lying between Rhodes on the east and Saria and Scarpanto islands on the west, is 24 miles wide and clear of danger, as the least water on the bank extending off Cape Praso nisi, the south-western extreme of Rhodes, is 40 fathoms. The western side of the strait is deep, and the coast of Saria island is high and steep-to.

Kaso strait is about 25 miles wide between the south-western end of Kaso island, and Elasa island lying  $2\frac{1}{2}$  miles south-south-eastward of Cape Sidero, the north-eastern extreme of Crete (*see page 51*); the strait is very deep and the only dangers are the shoals which extend  $1\frac{1}{4}$  miles in an easterly direction from Cape Sidero.

**The current** in Scarpanto and Kaso straits usually runs to the southward; sometimes southerly and south-west winds will cause an easterly current in the southern part of the archipelago, and greatly increase the current through the straits. The only rule, however, that can be given to assist the navigator is to allow for a current of from one to  $1\frac{1}{2}$  knots an hour in the direction of the wind when it amounts to a fresh or even a moderate breeze.

*Chart 872, Kalimno to Rhodes, &c.*

**Unia nisia** are two islets  $17\frac{1}{2}$  miles 258° true from Stakida islet; they cover a space of about one mile east and west, and can be seen from a distance of 20 miles, appearing on some bearings as two hummocks close together. They are steep-to.

**Kamila nisi.**—At 11 miles 282° true from the Unia nisia is Kamila nisi, about a mile in length north-east and south-west.

**Avga nisi** is a little islet rather more than 6 miles north-north-eastward of Unia nisia.

**Sophrana nisia** are two rugged islets, the larger, Megalo Sophrano, about 600 feet high, being the northern, Makri Sophrano

*General charts 872, 2836a, 2606.*

*Chart 872, Kalimno to Rhodes, &c. Var. 2° 40' W.*

the southern, with a small islet or rock between them, the whole extending over a distance of nearly 3 miles north and south. They lie 19 miles south-westward of Wreck rock of Sirina or Agios Ioannis islands. See page 319.

5

**Karavi nisía** (*Lat. 36° 00' N., Long. 26° 27' E.*) are two little islets or rocks lying  $2\frac{3}{4}$  miles south-south-eastward from Sophrana nisía.

The above islets lie within a radius of about 10 miles, the water around them being deep.

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*Chart 1888, Stampalia island.*

**STAMPALIA.**—This island (ancient *Astypalæa*), belonging to Turkey, is about 23 miles east-north-eastward of Anaphi (page 225), and extends  $9\frac{1}{2}$  miles in the same direction; the island has a Greek population of about 2,500. It is most irregular in shape, forming several bays and inlets, and consists of two large elevated rocky masses, united by an isthmus, which in the narrowest part is only about 120 yards across. The south-western part of the island is  $7\frac{1}{4}$  miles in length, and 1,660 feet high; and the north-eastern, 6 miles in length, and 1,299 feet high; each lying in a north-west and south-easterly direction. The deep bights on either side of the isthmus give, at a distance in the above directions, the appearance of two islands.

15

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**Livadhia**, the chief town, is situated on a promontory forming the northern side of the bay of the same name, on the east coast of the southern portion of Stampalia island, and contains about 1,500 inhabitants, many of whom get their living by fishing. It has a large number of churches and chapels, sometimes as many as six in a row; they are built to a great extent from the ruins of the ancient temples, and in every part of the town are seen capitals of columns and other remains. Here is a stately mediæval castle, commanding a splendid prospect. The skala or landing-place is in the little bay on the northern side of the promontory on which the town stands.

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**Communication.**—The best way to reach Stampalia is by boat from Kalimno island, or Rhodes. Landing is prohibited by night from any vessel.

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**South-west coast.**—Kavo Khilus (*Lat. 36° 30' N., Long. 26° 23' E.*), the south-eastern extreme of the south-western part of Stampalia, is a small clifly peninsula, 249 feet high. The steep irregular coast thence trends westward and northward to the islet of Katargari, a distance of about  $7\frac{3}{4}$  miles, and between there are one or two small coves with beaches; the coast is backed at a mile within by high mountainous land, and the water is all along deep. Katargari islet is about 2 cables in diameter, and the same distance from the

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*General charts 872, 2836a, 2606.*



*Chart 1888, Stampalia island. Var. 2° 40' W.*

shore with 4 fathoms water between; from it a rocky spit extends about  $1\frac{1}{2}$  cables south-westward. Liani point, the north-western extreme of Stampalia, is nearly  $1\frac{1}{10}$  miles northward of Katergari; nearly midway between is Kutsimi reef, steep-to, with a rock above water, extending 3 cables west-north-westward from Kavo Kutsimi; and 7 cables farther in the same direction is a patch of  $8\frac{1}{2}$  fathoms, called Kutsimi shoal, with deeper water around.

The little round islet called Panormos nisi lies 3 cables north-eastward of Liani point; there are  $3\frac{1}{2}$  to 5 fathoms water around it, and 27 fathoms midway between it and the point.

**Pontikutha islet.**—On the bank westward of Stampalia are the islets of Pontikutha and Ophidusa. Pontikutha is bold, rugged, 8 cables in length, and steep-to all round except at its north-eastern side, where the water shoals a little off. The islet is  $1\frac{1}{2}$  miles westward of Kavo Armenoi, a sharp cliffy point projecting from the central part of the coast of Stampalia, the water between being about 40 fathoms deep, over a level bottom. At  $1\frac{1}{10}$  miles southward of Pontikutha are three little islets or rocks called Ktenia, steep-to all round.

**Ophidusa islet** lies  $3\frac{1}{2}$  miles westward of Pontikutha; it is 2 miles in length north and south, its eastern side being nearly straight. Towards the northern end are some Hellenic ruins; the island is narrow, but the northern part, which is triangular in shape, is three-quarters of a mile in length east and west. The coast consists of bold steep cliffs, and the water all round is deep close-to, except at the western extreme, where a reef extends off  $1\frac{1}{2}$  cables.

**North-west coast.**—The great bight on the north-western side of Stampalia is about  $5\frac{3}{4}$  miles wide at the entrance, and from a line between the two extreme points  $3\frac{1}{2}$  to 4 miles deep; the coast on either side is indented with bays and inlets. It is divided into two parts by a chain of islets named Phokeo nisia, extending upwards of 2 miles north-westward from the isthmus; the shores of the isthmus and islets are bordered by shallow rocky ground, which runs off nearly half a mile north-north-westward of the islets. There is no passage between the islets, or between them and the isthmus, except for boats or vessels of light draught.

**Port Panormos** (*Lat. 36° 35' N., Long. 26° 18' E.*).—The principal inlet on the western side of the deep bight is Port Panormos, which is 7 cables long, with depths of from 43 fathoms at the entrance, to 9 fathoms at its head; the port is two-thirds of a mile eastward from Liani point, and open to the northward.

*General charts 872, 2836a, 2606.*

*Chart 1888, Stampalia island. Var. 2° 40' W.*

**Agios Andrea bay**, the head of the great bight westward of Phokeo nisia, has anchoring depths of from 15 to 6 fathoms, but it is open to the north-west.

**Port Vathy.**—On the eastern side of the bight is Port Vathy, a basin in the interior, nearly a mile in length, with from one to 5 fathoms water, but the narrow passage into it has a bar across it, on which there are only  $1\frac{1}{2}$  fathoms of water. In June, 1877, it was found that a wooden pole would penetrate to a depth of 30 feet in any part of the entrance. 5 10

**Vaïe inlet**, at the south-eastern corner of the bight, is a mile long, with from 15 to 8 fathoms near its head, but like Agios Andrea bay, it is open to the north-west.

**North-east coast.**—The north-eastern coast of Stampalia is nearly straight, composed of steep rocky cliffs broken by several inlets, and backed by high land; it is all along steep-to. 15

**South-east coast.**—Between the south-eastern extreme of the eastern part of the island, and the narrow part of the isthmus, the coast forms several bays or inlets, and on the bank fronting it are nine or ten islets, besides rocks and shoals. 20

**Kunupia.**—The outer and largest of these islets is Kunupia,  $1\frac{1}{10}$  miles in length north and south, and nearly divided into two parts, the southern part being connected to the northern by a low sandy neck. It lies  $2\frac{1}{4}$  miles southward of the eastern extreme of Stampalia.

**Kutzomiti.**—At 6 cables north-westward of Kunupia is Kutzomiti islet, smaller, though nearly of the same length as the former, but lying in a north-east and south-westerly direction; between the two are four smaller islets or rocks surrounded by shoal water. 25

Kutzomiti rock, with 6 fathoms over it and deep water around, lies half a mile east-south-eastward of the north-eastern extreme of Kutzomiti islet. 30

**Baraka Xera.**—At  $1\frac{2}{10}$  miles northward of Kutzomiti islet, and fronting the deep bay westward of the eastern extreme of Stampalia, is the Baraka Xera, with only  $2\frac{1}{2}$  fathoms water on it. The shoal lies 4 cables south-eastward from Baraka, a rounded headland, 164 feet high, the eastern entrance point to Port Agrilithi; the southern side of the shoal is steep-to, but at the northern side there are from  $5\frac{1}{2}$  to 9 fathoms. 35

*Plan 387, Port Maltezana.*

**Agia Kyriaki island** (*Lat. 36° 33' N., Long. 26° 25' E.*) lies  $1\frac{1}{2}$  miles westward of Kutzomiti islet; it is about  $3\frac{1}{2}$  cables in diameter, 81 feet high, and bordered by a narrow bank with sunken rocks here and there; on its southern side is a rocky cove, and close to its south- 40

*General charts 1888, 872, 2836a, 2606.*

*Plan 387, Port Maltezana. Var. 2° 40' W.*

eastern end is an islet with shoal water extending nearly a cable east-north-eastward. See view on plan 387.

- Oxo Xera.**—South-eastward of Agia Kyriaki are two shoals and a bank, known collectively as Kyriaki shoals, the southern with 21 fathoms water on it, the middle with 4 to 10 fathoms, and the northern, named Oxo Xera, with 2 fathoms. The middle shoal is about 2 cables long north-west and south-east, within the 10-fathoms line, and has a patch of 4 fathoms on its northern part. The depths on it are very uneven, and it is unadvisable to anchor upon it, even temporarily.

- Oxo Xera, nearly 2 cables in length within the 5-fathoms line, has general depths of 3 and 4 fathoms; its shoalest head with 2 fathoms lies  $5\frac{1}{2}$  cables  $161^\circ$  true from the south extreme of the islet at the south-eastern end of Agia Kyriaki.

The western extreme of Glinio nisi,  $335^\circ$  true, open west of Agia Kyriaki, leads westward of these shoals.

- Konomato Xera.**—This shoal, which is  $1\frac{1}{2}$  cables in extent, lies north-eastward of Agia Kyriaki, and has only  $1\frac{3}{4}$  fathoms water on its shoalest part, and elsewhere from 2 to  $4\frac{1}{2}$  fathoms. Between the shoal and the shallow water bordering Agia Kyriaki, the passage is about  $2\frac{3}{4}$  cables wide, and the north-east extreme of Glinio nisi, in line with the south-western point of Kondro nisi, bearing  $323^\circ$  true, will lead through in mid-channel.

- At about 60 yards north-eastward of the extremity of Skinonda point, in the central part of Port Maltezana, is a white obelisk about 14 feet high, which kept open eastward of Kondro nisi, bearing  $315^\circ$  true, leads eastward of Konomato Xera.

- Bogazeu Xera.**—At nearly 2 cables north-westward of Agia Kyriaki is the Bogazeu Xera, a shoal with 3 fathoms water on it; from half a cable to  $1\frac{1}{2}$  cables north-eastward of the shoal are other patches with 4 to  $5\frac{1}{2}$  fathoms. These shoal patches will be avoided by keeping westward of a line joining the western extremes of Glinio nisi and Agia Kyriaki, until the western point of entrance to Port Agrilithi is in line with or nearly touching the southern extreme of Kondro nisi, bearing  $49^\circ$  true; this latter mark will lead northward of the shoals, or between them and Glinio nisi.

- PORT MALTEZANA** (*Lat.  $36^\circ 34' N.$ , Long.  $26^\circ 25' E.$* ) is formed on the southern side of the isthmus, which unites the two parts of Stampalia. The port is nearly  $1\frac{1}{4}$  miles in length, and nearly half a mile in greatest breadth, with from  $4\frac{1}{2}$  to 16 fathoms, sand and mud. It is well sheltered and covered on the south by the islands of Glinio nisi and Kondro nisi, and adjacent rocks; it is bordered all

*General charts 1888, 872, 2836a, 2606.*

*Plan 387, Port Maltezana. Var. 2° 40' W.*

round by a shallow bank, and one cable south-eastward from Skinonda, the central point, is a detached shoal with 4 feet water on it.\*

There are three entrances to the port; the western, north-west of Glinonisi between two little islets, 32 feet and 18 feet high, with a depth of  $3\frac{1}{4}$  fathoms, is fit for small vessels only. Between Glinonisi and Kondronisi is a deep entrance with a navigable width of about one cable, which may be taken by a vessel under steam or with a fair wind, by keeping in mid-channel and avoiding the shoal water off the salient points; a shoal, with 3 fathoms on it, lies north-westward nearly one cable from the north-west extremity of Kondronisi. The eastern entrance or passage northward of Kondronisi, about  $1\frac{1}{4}$  cables wide, is, however, the best, especially from the eastward taking care to avoid the Baraka Xera, and the bank extending half a cable from Vriseu Punda, the point opposite or northward of Kondronisi. See view on plan 387.

There is also temporary anchorage during fine weather in summer, in the bay formed between Makria Punda and Glinonisi; the bottom is sand and mud, but the water is rather deep.

**Water.**—At the head of the port, at the western end, there are some wells of good water.

*Chart 872, Kalimno to Rhodes, &c.*

**SIRINA or AGIOS IOANNIS ISLETS.**—At  $8\frac{3}{4}$  miles south-eastward of Kunupia islet is a group of three little islets named the Adelphæ, extending nearly 2 miles east and west, with deep water round them. They are the north-westernmost of the Sirina or Agios Ioannis group, which extend over a space of about 11 miles in a south-east and north-west direction.

**Sirina island** lies about 4 miles south-eastward of Adelphæ islets; it is about  $2\frac{1}{2}$  miles in length north and south, rugged, and 1,087 feet high, with deep water round it.

At  $1\frac{3}{4}$  miles south-eastward of Sirina, and on a separate bank, is Goat islet, 35 feet high, with a sunken rock on its eastern side, and a rock or islet, 10 feet high, called Kid rock, south-west of it. On the same bank farther south are the Tria nisia, with a patch of 9 fathoms water between. The southern islet of Tria nisia is 232 feet high, and  $2\frac{1}{4}$  miles westward of it is Wreck rock, 10 feet high, on another bank, and appearing like a vessel's hull (*Lat. 36° 17' N., Long. 26° 42' E.*).

*Plan of Kandeliusa on chart 2836a.*

**KANDELIUSA.**—This island, a mile in length, north-east and south-west, half a mile in breadth, about 180 feet high, and steep-to

\* In September, 1879, a British squadron, consisting of the *Alexandra* flagship and three other heavy vessels, moored in Port Maltezana; and the *Temeraire* (8,540 tons) moored in the channel between Glinonisi and Kondronisi, with the north-west extreme of Kondronisi 32° true, south-west extreme of the same island 149° true, and the north-east extreme of Glinonisi 319° true.

*Plan of Kandeliusa on chart 2836a. Var. 2° 30' W.*

all round, is about 16 miles north-eastward from Sirina or Agios Ioannis islands, the passage between being deep and clear.

- LIGHT** (Lat. 36° 30' N., Long. 26° 59' E.).—A light is exhibited,  
 5 at an elevation of 180 feet above the sea, from a white tower, 33 feet high, on west side of lighthouse keeper's dwelling, 109 yards within the south-western extreme of Kandeliusa.

**Shoal.**—A shoal, with a depth of less than 6 feet over it, lies 2½ cables south-westward from the lighthouse.

- 10 *Chart 1898, The islands of Kos, Niseros, and Piskopi.*

- PISKOPI or TILO.**—This island (ancient *Telos*), about 8½ miles in length, north-west and south-east, and from one to 4½ miles in breadth, is irregular in shape and indented by several bays. It is mountainous throughout its length, and at the north-western end  
 15 Agios Elias, the highest peak, attains an elevation of 2,010 feet; the hills round the island rise into detached peaks of considerable height, and add much to the beauty of the scenery. The north-western coast consists of high cliffs. There are several remains of antiquity in fragments of columns, altars, and inscriptions, and on the shore of Livadia  
 20 bay is an extensive ruined fort of the Cyclopean order, now the resort of partridges. Some Venetian towers still remain.

- There are two villages on Piskopi, and the plain between them is well cultivated, and produces almonds (the staple), olives, vines, figs, &c. The inhabitants of the island number about 3,000 Greeks, who maintain themselves by agriculture.  
 25

**Supplies and water.**—Pigs are reared, and small supplies of stock may be obtained; no fuel is to be procured, and most of the meat and charcoal are derived from Asia Minor; water is scarce.

- Gaidaro islet or Plaka-nisi**, off the north-western end of  
 30 Piskopi, is about 9 cables in length, bold, 447 feet high, and separated from Spano point, on the west side of the western horn of Plagio bay, by a deep and clear channel half a mile wide. Two rocks, above water, lie close to the west coast of Piskopi, about two-thirds of a mile southward of Spano point.

- Plagio bay**, at the northern end of the island, is 1½ miles wide, more than a mile deep, and open to the northward; at its head is the skala, half an hour's walk from Tilos, the chief village, which, entirely hidden from the anchorage in Plagio bay, contains about 125 houses, and stands on the side of a steep hill facing south. Vessels requiring  
 40 cargoes lie off the skala in 8 or 10 fathoms, sandy bottom, but it is not advisable to anchor here if it can be avoided, as the holding ground is not good, and a swell, attended by a current, frequently sets in before a northerly wind, which renders it difficult for a sailing vessel to get

*General charts 1898, 872, 2836a, 2606.*

*Chart 1898, The islands of Kos, Niseros, and Piskopi.* Var.  $2^{\circ} 20' W.$  out. The entrance points should not be approached too near, and the western shore of the bay is skirted by rocks.

**Livadia bay** (*Lat.  $36^{\circ} 25' N.$ , Long.  $27^{\circ} 26' E.$* ), on the north-eastern coast of Piskopi, is about three-quarters of a mile wide, and is considered the safest anchorage, though exposed to north-easterly winds; it is bordered by a bank, and in the middle of the bay the water is rather deep, but there are anchoring depths near its head, and a berth will be found in 11 fathoms, good holding ground, on the south-east side. During summer vessels lie here with a hawser to the eastern shore. The little islets of Prasuda and Gaidaro-nisi, half a mile apart, the latter the southernmost, lie close to the shore, north-west of the bay; they are surrounded by shoal water, and there is no passage inside them.

**Piskopi head**, the eastern extreme of the island, rises from deep water, and nearly half a mile within it the land is 1,620 feet high. The 100-fathoms line of soundings passes round the head at a distance of less than 2 cables.

A sunken rock lies close off Kinduno point, the southern extreme of Piskopi, and shoal water extends nearly 2 cables southward from Kavo Pelagusa, the point next west of it.

**Megalo bay**, on the south-western side of the island, is about  $1\frac{1}{2}$  miles deep, but entirely open to the southward. It forms two bights, Kamara bay, on the west side just within the entrance, and Eristos bay, at the head. At the head of Eristos bay there are anchoring depths in 16 to 12 fathoms, sand, but inside the latter depth the bottom is foul; the shore at the head of the bay is bordered by a bank. A little islet, named Agios Andreas, lies off the western entrance point of Megalo bay, and a reef of rocks extends nearly 2 cables southward from Kavo Maru, the eastern point.

**Anti Tilo or Askino nisi** is  $1\frac{1}{2}$  miles in length, north-east and south-west, narrow, high, and steep-to all round. It is separated from the south-eastern end of Piskopi by a channel  $1\frac{3}{4}$  miles wide and 150 fathoms deep. The passage between Anti Tilo and Khalkia on the south (*see* page 307) is nearly 8 miles wide, clear and deep.

**NISEROS** (*Lat.  $36^{\circ} 35' N.$ , Long.  $27^{\circ} 11' E.$* ) (ancient *Nisyros*), in the form of a pentagon, 4 miles across, is composed of rocky volcanic mountains, and a long irregular crater occupies a large portion of the centre of the island. The edges of the crater rise generally from 1,350 feet to 1,874 feet above the sea, but a small crater to the westward, the greatest elevation of the island, is 2,270 feet high. Sulphur is found in the large crater, the bottom of which forms a small plain only 455 feet above the sea. The sides of the island are precipitous, with terraces to the top in order to keep the earth from washing down

*General charts 872, 2836a, 2606.*

*Chart 1898, The islands of Kos, Niseros, and Piskopi. Var. 2° 30' W.* in the rainy season. The groves of almond trees, vineyards, &c., present a picturesque appearance from the sea.

- As may be expected from the nature of the island, there are many  
 5 hot springs, the most important being at Cape Lutros, its southern extremity, where the villagers assemble to wash their linen and bathe. Under Petrodi point, the south-western end of the island, are some hot air caves. There are two large thermal bathing establishments on the north coast of the island, one at the eastern end of Mandraki and  
 10 the other near Skala.

The population, amounting to about 2,500, are civil and industrious. There are neither mules nor horses on the island, but only a breed of small asses, on which and men's shoulders everything has to be carried. The produce consists of almonds, olives, figs, wine, and valonia.

- 15 **Mandraki**, the chief village, situated at Molo point, the north-western extreme of the island, and near the site of the ancient town of Niseros, is dirty, but the ruins of the ancient fortifications on a point south-westward of it give it an appearance of consequence which a nearer inspection dissipates. There are two other villages, Imbori and  
 20 Nikia; the latter, erected on the extreme edge of the crater, is about an hour's walk from some hot springs at the south-eastern extreme of the island.

- Anchorage.**—There is no port or anchorage for large vessels, but the skala is at a slightly projecting point on the northern side about  
 25 1½ miles eastward from Mandraki, and vessels occasionally drop an anchor off it in fine weather during summer, but if they require to remain in the vicinity they anchor in 3 or 4 fathoms, sand, on the south-eastern side of Yali.

- Anchorage can be obtained in a depth of 16 fathoms at about a  
 30 quarter of a mile eastward of Mandraki and 1½ cables from a small pier in this locality.

- The coasts of Niseros are bordered here and there by scattered rocks, but they do not extend far off. Shoal water extends a quarter of a mile from the north-eastern coast of the island, and on the west side,  
 35 at 4 cables north-north-westward from Petrodi point, there is a small rocky shoal with only 3 feet of water on it, and deep water between it and the shore.

**Supplies.**—Provisions are scarce, and water is all preserved in tanks.

- 40 **Rakhia, or Pasha islet** (*Lat. 36° 34' N., Long. 27° 06' E.*), nearly 2 miles westward of Petrodi point, is more than a mile in length, and 350 feet high. At a little less than half a mile north-eastward of its eastern point is a small rocky shoal with only 3 feet water on it, and difficult to see, with deep water inside it; and north-north-westward of

*General charts 872, 2836a, 2606.*

*Chart 1898, The islands of Kos, Niseros, and Piskopi.* Var.  $2^{\circ} 30' W$ .  
 Petrodi point, Niseros, is a similar shoal, already mentioned. The  
 passage between them is clear, and  $1\frac{1}{4}$  miles wide. These shoals are  
 the only dangers in working between Rakhia and Niseros, and in stand-  
 ing towards the former do not open Strongyli islet more than half its  
 breadth of the north-western part of Niseros,  $31^{\circ}$  true, until well north-  
 ward or southward of Rakhia islet. With a fair wind keep in mid-  
 channel. 5

**Rigusa, or Perigusa**,  $1\frac{1}{4}$  miles north-west of and similar to  
 Rakhia, but only 235 feet high, is bordered by shallow water and  
 rocks. In a bend of the shore, on the eastern side of Rigusa, a small  
 vessel might drop an anchor, but close in, during westerly winds. The  
 passage between Rakhia and Rigusa is a mile wide, and, with the  
 exception of the shoal ground bordering the latter islet, is clear and  
 deep. 10 15

**Yali or Ialos**,  $1\frac{1}{4}$  miles north-north-west of Niseros, is nearly  
 3 miles in length north-north-east and south-south-west, and consists of  
 two portions united by a low isthmus about  $1\frac{1}{2}$  cables across, the northern  
 portion being 580 feet high; the coast is irregular and bordered by  
 shallow water and rocks, which on the south-eastern side extend off  
 half a mile. A little islet southward of the north-eastern part, known  
 as Agios Antonios, is joined to Yali by shoal ground; a quarter of a  
 mile southward of the islet is a rock with less than 6 feet water on it,  
 and between is a depth of 32 fathoms. 20

**Rock.**—At about 4 cables south-westward of the southern point of  
 Yali is a small rocky shoal with 3 feet water on it and 10 fathoms  
 between it and the point. When in the vicinity of the point the north-  
 eastern extreme of Yali,  $34^{\circ}$  true, open eastward of Agios Antonios,  
 will lead eastward of the shoal. 25

**Strongyli**, a small circular islet about 3 cables in diameter and  
 410 feet high, lies  $1\frac{1}{2}$  miles eastward of Yali, and, between, the water  
 is from 25 to over 100 fathoms deep. The passage between the  
 northern end of Yali and Kos island is  $4\frac{1}{2}$  miles wide, deep and clear,  
 though the coast about Andemaki point, Kos island, is foul and should  
 be given a reasonable berth. 30 35

**The current** runs strongly round Niseros and the surrounding  
 islands, at uncertain times, and in various directions.

*Chart 1604, The Gulfs of Kos, Doris, and Symi.*

**SYMI** (Lat.  $36^{\circ} 36' N.$ , Long.  $27^{\circ} 52' E.$ ).—This island (ancient  
*Symé*) lies at the entrance of the Gulfs of Doris and Symi. It extends  
 about  $6\frac{1}{2}$  miles north and south, and  $5\frac{1}{2}$  miles east and west, but it is  
 most irregularly shaped, its coast being indented with numerous bays  
 and inlets. Symi, the only town in the island, stands on an acclivity 40

*General charts 872, 2836a, 2606.*



*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

above the skala in the harbour, which is a nook or basin about a quarter of a mile north and south, and  $1\frac{1}{2}$  to 2 cables wide, with a narrow entrance, on the southern side of the bay of the same name, on the  
5 north-eastern side of the island.

**Industries.**—The inhabitants, amounting to about 8,000, nearly all live in the town, and are chiefly occupied with the sponge fishery, which employs about 150 boats and a dozen small vessels. The island is the head depot for European manufactured goods, which are thence  
10 exported throughout the Sporades.

**Nimos island**, close north of Symi, is nearly 2 miles in length east and west, and its southern side forms, with the north-western end of Symi, to which it is connected by a reef, the north-western side of Symi bay. Skilo or Xelon rock, above water, and steep to on the out-  
15 side, lies close to the east end of Nimos; on the western side of Nimos is the islet of Kondros, south-westward of which, off the coast of Symi, are the islets of Plati and Oxa.

**Symi bay** is  $2\frac{3}{4}$  miles deep, and, except at Nemborio bay, in the south-western corner, averages about a mile in width; the water is  
20 deep, but off the sandy beach at the head of Nemborio bay there are from 14 to 20 fathoms. Nemborio bay is separated from Symi harbour eastward of it by a rocky projection about half a mile across.

**Symi harbour** is enclosed by steep mountainous land about 1,800 feet high, and the water is deep, there being 24 fathoms in the  
25 middle. It is much frequented by vessels of 200 to 300 tons; an anchor is dropped near the centre, and the vessels then haul alongside the quay which runs round the harbour, where there are bollards for making fast. The larger vessels lie on the western, and the sponge boats and the small craft on the eastern side. The harbour is so small  
30 that during the winter months there is scarcely room for the number of vessels that lay up here. Vessels should enter with caution.

**Communication.**—Steamers of the Pantaleon Company call fortnightly.

**Supplies.**—Beef and bread can be obtained from the town of  
35 Symi, at the head of the harbour.

**Pethi harbour** (*Lat. 36° 37' N., Long. 27° 54' E.*), on the eastern side of the island and three-quarters of a mile southward of Symi bay, is also a snug little port with a narrow deep entrance open to the north-east. Within the entrance there are from 18 to 5 fathoms  
40 water, good holding ground, with sandy beaches. Here are some remains of a castle and of Cyclopean walls. When off this harbour the town of Symi, some windmills, and a circular building will be seen on

*General charts 872, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

the hill westward of its head. It is said that this harbour is better and more convenient than Symi or Nemborio bay.

**Supplies.**—Supplies of beef and bread can be obtained from the town of Symi, which is less than a mile from the anchorage. 5

From Pethi harbour to the southern end of the island, a distance of nearly 6 miles, there are several bays formed between the spurs or ridges of the high land; these bays are all open to the eastward, having deep water, and of no importance.

**Paniero harbour**, on the western side of the south end of Symi, is an oval basin half a mile in length, with 5 fathoms water just within the entrance and shoaling to 3 feet. It is sheltered from all winds, and is a convenient port for small vessels, though it is said the bottom is indifferent holding ground. The entrance is about a cable wide, and on the south-eastern side of the bay is the monastery of Panormiotes, inhabited by a few Greek monks. There is nothing to be obtained, as the inmates of the monastery are the only persons here, and all necessaries have to be brought from the town of Symi in boats, as the road is over steep, rugged land. 10 15

In proceeding for Paniero harbour give Patos point, a tongue-like projection southward of it, a reasonable berth, as it is surrounded by rocks; then keep the southern shore aboard until the entrance is open. 20

**Seskli island**, off the southern end of Symi, is more than a mile in length east and west, and three-quarters of a mile in breadth; its eastern point is bordered by rocks above water. Trambeto islet lies off the south-eastern and another islet off its western side. The passage between the island and Symi is about 4 cables wide, clear, deep, and called Seskli strait. 25

**Yavales or Diavatés islets.**—The western coast of Symi is rugged and irregular, with several bays and projecting points. At the central part of the coast is a ragged, irregular projection, and from it a chain of four rocky islets extend  $1\frac{3}{4}$  miles south-westward, called Yavales islets. The outer islet is known as Marmora islet, and is separated from the rest by a passage about one-third of a mile wide, having a depth of 16 fathoms in mid-channel. The three northern islets are closer together, and skirted by rocks; rocks also extend off from the south side of Marmora, and the 100-fathoms line of soundings is less than a quarter of a mile outside it. There is nothing to be gained by rounding Marmora islet closely, and it should therefore be given a reasonable berth. 30 35 40

**CAPE ALUPO** (Lat.  $36^{\circ} 33' N.$ , Long.  $28^{\circ} 01' E.$ ) (ancient *Kinossima prom.*) is the southern extreme of a long narrow peninsula projecting south-westward from the mainland, and which separates

*General charts 872, 236, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

Rhodes channel from the Gulfs of Symi and Doris. The coast of this peninsula (which is covered with ancient and mediæval ruins), from Cape Alupo to Cape Marmarice, its eastern extreme, a distance of more than 19 miles, is steep and rugged, with a range of limestone rock at the back averaging 1,500 feet in height.

**Rock.**—A sunken rock lies at the foot of Cape Alupo, to which a reasonable berth should be given in rounding.

For a description of the south-eastern coast of this peninsula, *see* 10 Mediterranean Pilot, Vol. V.

**GULF OF SYMI.**—Cape Volpé or Kavo Noria, 3 $\frac{1}{10}$  miles north-north-westward of Cape Alupo, is the north-western extreme of the peninsula of which the latter is the southern extreme; the coast between the two capes is rugged with a central projection, on 15 the northern side of which is a bay with a small cliffy creek and some ruins, named Karamaki. Cape Volpé is bordered by shoal water which is steep-to, and it should be given a reasonable berth in rounding.

Cape Volpé (*Lat. 36° 36' N., Long. 28° 00' E.*) is 3 $\frac{3}{4}$  miles from Symi island, and forms the southern point of entrance to the Gulf of 20 Symi, the northern point of entrance being Cape Apostoli, 4 $\frac{1}{2}$  miles northward. From the line joining these two points the gulf is 6 $\frac{1}{2}$  miles deep, with several islands and bays near its head. Along the southern shore are the little islets of Miniko, Petro, Aulaki, Plati, and Makri; the water is deep on either side of the two former, but there is no 25 ship passage between the three latter. A vessel may pass into Saranta bay, north of Aulaki, or south of Makri islet, which is one-third of a mile from the shore, with deep water between. Mount Kara Esek, east-south-eastward of the islets, is 1,780 feet high; northward of the mount are large ancient ruins.

30 A rock above water, and a sunken one outside it, lie off the entrance of a little cove south-westward of Miniko islet.

**Saranta bay**, in the eastern part of the gulf, is formed by a southerly projection of the land, close off which is the island of Karmari lying in the same direction, and united to it by shoal ground. At the 35 head of the bay is the village of Saud, or Saranta, and on a hill south-eastward of it are the remains of an ancient fortress. On the eastern side of Saranta bay the shore in one or two places is bordered by shoal water, and a sunken rock lies a little off the shore at the head of the bay, with others near the eastern side of Karmari island, about half a 40 mile from its extreme south point. The islets of Aulaki, Plati, and Makri front the bay south-westward.

On the north-western side of Karmari island is the island of Lebunia or Limpunia, about half a mile in length, connected to Karmari by shoal ground, and at its western end are two little islets and a sunken

*General charts 872, 236, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

rock, with deep water near them. Leburnia covers a bay on the north, but the water in it is too deep for ordinary anchorage.

**Vunos island**,  $1\frac{1}{4}$  miles in length north and south, covers the approach to Badalena bay. Its northern end is about a cable from the northern shore of the Gulf of Symi, and this narrow passage, with rocks on either side, carries from 2 to 3 fathoms water. 5

**Badalena bay** (*Lat.  $36^{\circ} 41'$  N., Long.  $28^{\circ} 05'$  E.*) runs in about  $1\frac{1}{4}$  miles to the northward, with an average breadth of about half a mile, and is land-locked. The water is rather deep at the entrance, but inside a small islet with some ruins on it the depths are from 10 to 18 fathoms; at the north-western part of the bay the water shoals off from a small projection nearly 2 cables. There are some houses and a water-mill on the eastern shore, and over the head of the bay north-eastward are the remains of a mediæval fortress. 10 15

The ship passage to Badalena bay is round the southern end of Vunos island, and northward between Agia Varvarah islet with ruins on it on the west, and the eastern point of entrance; thence eastward of the small islet with ruins on it. The water in mid-channel is deep, and the only danger to be avoided is the shoal bank bordering the north-western part of the bay. 20

**Cape Apostoli.**—At about a mile westward of the northern part of Vunos island is the little islet of Khaskos, separated from a sandy beach on the north by a narrow passage with  $1\frac{1}{2}$  fathoms water. At  $2\frac{1}{2}$  miles westward of the islet is Cape Apostoli, the termination of an irregular promontory, which, like the peninsula on the southern side of the Gulf of Symi, has numerous mediæval ruins on it. At about 4 cables eastward of the cape is a little cove, with 10 fathoms at its head; rocks extend off both points of entrance, and are steep-to. Cape Apostoli is nearly 5 miles eastward of Nimos island, off the northern end of Symi island (*see* page 324), and both are on the southern side of the Gulf of Doris. 25 30

**Age Latha.**—This dangerous patch of rocks, awash and steep-to, lies about  $3\frac{1}{2}$  cables south-westward from the south-western extreme of Cape Apostoli, with from 30 to 45 fathoms water between. At night the cape should be given a wide berth. 35

**Mesia bank**, with 9 fathoms on it, lies  $1\frac{1}{2}$  miles west-north-westward of the cape.

**GULF of DORIS.**—Between Cape Apostoli and Orta point, bearing from it  $331^{\circ}$  true, the distance is  $4\frac{1}{2}$  miles, and from this line the Gulf of Doris and Arineh bay or Gulf of Renas run in  $10\frac{3}{4}$  miles. From the cape the southern shore of the gulf is irregular, and forms several little bays fronted by five islands or islets known as Nisia Kalo- 40

*General charts 872, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

pothia. The first three of the islets, Oneah, Ikinji, and Mikale, are small, and two rocks above water extend from the northern end of Oneah; the point of the coast southward of this latter islet is foul.

- 5 The water round the islets is deep, and there are narrow passages through them, and between them and the shore.

- Kaloyeri** (*Lat. 36° 43' N., Long. 28° 04' E.*) and **Karamea**, the two eastern and largest islands, are each more than a mile in length and partially cultivated; the water between them is deep, but the south-western end of the former is bordered by a shoal bank, and likewise the point of the mainland south of it, but the narrow pass between has 15 fathoms water in mid-channel. The southern side of Karamea island is skirted by rocks, but the passage between it and the coast, with the exception of a large rock above water within the eastern entrance, is clear and deep. On the main, opposite the opening between Kaloyeri and Karamea islands, and on the east side of the eastern bay, are conspicuous bold precipitous cliffs; the scenery here is grand and imposing.

- 20 The northern shore of the gulf is not so deeply indented, but barren, of a reddish colour, and forms a strong contrast with the opposite coast.

- Losta bay**, at the termination of the cliffs on the south shore previously mentioned, and eastward of Karamea island, extends about  $2\frac{1}{4}$  miles east-south-eastward, and opens out upwards of a mile south-westward, where it averages three-quarters of a mile in breadth, and takes the name of Port Losta. The bay affords a most attractive view; on the northern side are ancient ruins and the remains of a castle on the summit of a hill. At the head of Port Losta are some houses, a water-mill, and the remains of another mediæval fortress.

- 30 **Dangers.**—In entering Port Losta, a rock, with 3 feet water over it, lies a quarter of a mile inside the western entrance point, while at the same distance south-westward from the eastern entrance point, is a large rock or islet with shoal water extending from it southward, with 10 fathoms inside it; elsewhere the water is deep.

- 35 **Arineh bay, or Gulf of Renas**, in continuation of the Gulf of Doris, is  $3\frac{3}{4}$  miles deep, and for  $1\frac{1}{2}$  miles within it is only a mile wide, when it opens out, with bays or indentations on either side, a semi-circular sandy shore at its head, and anchoring depths in every part of it. The little islet of Koraka, skirted on the north by rocks, lies close to the shore at the south-east point of entrance; the larger islet of Thiaspori or Lansa, also bordered by rocks, lies at the north-west point of entrance, covering a little bight formed by a projecting tongue of land north-westward, the southern termination of which is called Pin-nacle point.

*General charts 872, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

**Sunk rock** (*Lat. 36° 45' N., Long. 28° 05' E.*).—At 3 cables south-south-westward from Pinnacle point is Sunk rock, with one fathom on it and deep water around. The north-eastern point of the bay next north-east of Thiaspori islet, in line with the south-east extreme of the islet bearing 41° true, leads south-eastward of Sunk rock. 5

The north-eastern part of Arineh bay, between Port Kiervasili and two sandy coves north-westward, is mainly a circular beach, with from 8 to 16 fathoms water, muddy bottom, off it. In the middle of the beach the Erchuse chai runs into the sea; there are several ancient ruins in the vicinity, and on the eastern side a mediæval fortress. On the eastern shore, at the head of a small cove, is a spring. 10

**Arineh town** or **Assareneh** is about 1½ miles in from the eastern shore.

**Port Kiervasili** is a narrow inlet running 1½ miles south-south-eastward from Arineh bay, the average breadth being about one-third of a mile; but about two-thirds in it is contracted by an islet which is united to the western shore by shoal ground; the depths decrease from 17 fathoms at the entrance to 5 fathoms at the head. The eastern shore is mainly a beach bordered by shallow water, with a lagoon at the inner part, and close northward of the lagoon is a spring; within it are scattered remains of the Middle Ages, and north-westward of the elevated land of Arin Dágh are the ruins of an ancient temple and a theatre. The village of Kiervasili is about three-quarters of a mile eastward from the inner part of the port, and from it a road leads to Marmarice harbour. 15 20 25

**Pedalo bay**, westward of Port Kiervasili, and separated from it by a tongue of land, the extremity of which is skirted by rocks, is nearly half a mile deep, having a beach at its head, with from 10 to 14 fathoms water; its western side of entrance is also bordered by rocks. 30

**Penzik.**—This narrow inlet, westward of Arineh bay, leads up to the Dorian isthmus. Its entrance is fronted by the little islet of Kophinitia, from which a reef extends northward 1½ cables, with 15 fathoms water in the narrow passage between it and the north-western shore; on the east side of the islet, with the exception of Sunk rock previously mentioned, the passage is clear. The inlet extends north-north-eastward 1½ miles, and carries from 15 fathoms water at the entrance to 2 fathoms at its head, but on the western shore, about two-thirds of the way in, is a sunken rock. 35 40

**The Dorian isthmus** (*Lat. 36° 47' N., Long. 28° 05' E.*) is

*General charts 872, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

about half a mile across, as in the days of Herodotus, and small boats are occasionally hauled over it.\*

**DORIAN PROMONTORY** (or ancient *Triopium*), separating the Gulfs of Doris and Kos, is a long tract of land, irregular in shape, of considerable elevation in places, and at the Dorian isthmus and Datcha bay nearly divided into islands by the waters of the two gulfs. The promontory extends westward about 35 miles from the mainland, varying in breadth from about half a mile to  $6\frac{1}{2}$  miles, with several coves or bays along its southern side. A high mountainous ridge runs through its centre as far as Datcha bay, when it gradually falls; but, rising again to the westward, forms a great mass which reaches an elevation of 3,850 feet above the sea.

**Shoals.**—A shoal, with one fathom water on it, lies close to the eastern side of entrance to Lintos bay, which is one mile westward of Kophinitha islet; at about 6 cables south-westward of the eastern point of Lintos bay is another shoal with 5 fathoms on it.

**Kochini bay** (*Lat. 36° 45' N., Long. 27° 57' E.*) or **Kato Armakitha** is about  $6\frac{1}{2}$  miles westward of Penzik inlet; the coast between is irregular, and forms several little bays and coves.

Orta point, on the eastern side of entrance to Kochini bay, has a rocky shoal at its foot, and between the point and Kara point one mile to the west, the bay falls back nearly a mile northward, but on its eastern side is a group of small islets or rocks, steep-to, and which contracts the passage to about half a mile. There is anchorage in the north-western part of the bay in 15 fathoms, mud bottom, or farther in if necessary.

**Kara point** is the extremity of a small promontory connected to the main by a sandy isthmus; the promontory divides Kochini bay on the east from Ano Armakitha bay on the west. A small islet, surrounded by shoal water, lies off the south-western extreme of the promontory, and from the eastern side of Ano Armakitha bay shoals extend one-third its breadth across.

**Water.**—Ano Armakitha bay is nearly a mile deep, with a circular sandy shore, bordered by a bank, at its head; and here a small stream of good water runs into the sea.

**Gull rock.**—This rock, 8 feet above water, is the outer of a cluster of little islets or rocks extending from rocky points over a distance of about  $1\frac{1}{4}$  miles, in the vicinity of which are mediæval ruins. Gull

\* It was attempted in ancient times to cut through the Dorian isthmus, but the workmen were so obstructed by the peculiar nature of the ground that they imagined it to be the interference of some supernatural power, and the inhabitants of the promontory sent for advice to the Pythian oracle at Delphos, who declared that if Heaven had intended it for an island it would have been one. The attempt was therefore laid aside, but the isthmus was fortified by a wall, the tower and remains of which were to be seen a few years ago. The ground appears to be of volcanic origin, and composed of a calcinal crumbling rock, somewhat resembling flint or rather vitrified stone.

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 20' W.*

rock is steep-to, lies about 4 miles westward of Ano Armakitha bay, and about 4 cables from the shore on the eastern side of the entrance to Datcha bay.

**Datcha bay** (*Lat. 36° 45' N., Long. 27° 46' E.*).—From the western end of the rocky points just mentioned rocks above and below water with ancient ruins on them and deep water close to extend in a south-westerly direction nearly three-quarters of a mile. Close to the westward of these rocks is the islet of Aiak adasi, 4 cables in length, and skirted by rocks. From the rocky point a sandy shore curves round to the west and south-west, forming Datcha bay, which is about  $3\frac{1}{2}$  miles wide and a mile deep, with depths of from 6 to 25 fathoms, muddy bottom, affording well-sheltered anchorage from all winds from S.W. round northward to East.

The land in the vicinity of the bay is partially cultivated; on the western side a small stream of good water runs into the sea; nearly half a mile south-westward is another stream; and about two-thirds of a mile south of the latter stream are large ancient ruins on the point separating Datcha and Chatalia bays. The town of Datcha stands on rising ground  $1\frac{3}{4}$  miles inland to the westward, and the Custom house is in a little cove in the southern part of Chatalia bay, and off which there is anchorage for small vessels.

The Dorian promontory at Datcha bay is contracted to a little over one mile across, and the elevated ridge which rises over the coast eastward culminates north-eastward of the bay in Mount Emeji, 2,440 feet high, and three-quarters of a mile from the southern shore of the Gulf of Kos.

**Ata islet.**—A small isolated islet or rock, named Ata or Plati, with sunken rocks at its base and deep water close to, lies nearly three-quarters of a mile south-eastward of the south-western extreme of Datcha bay, and there are from 25 to 5 fathoms between it and the shore.

**Injah point or Cape Kalosuru**, a narrow tongue of land half a mile in length, projecting south-eastward, is the south-eastern termination of the high mountainous mass which forms the western part of the Dorian promontory. The point is steep-to, the 100-fathoms line of soundings being only 2 cables from it.

**Baba island.**—The island of Baba, or Barba Nikola, lies 8 miles westward of Injah point; the coast between is irregular, and some of the projecting points are bordered by rocks. The high land in the interior reaches the height of 3,850 feet above the sea. Baba island is rather more than half a mile in length north and south, and, with the exception of a sunken rock close to its southern end, is clear all round.



*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 20' W.*

**Epano Georgios.**—Northward of Baba island is Epano Georgios, a semicircular bay with a beach on its western side, off which, and north-westward of the island, vessels frequently anchor  
5 during northerly winds in from 10 to 17 fathoms water, sand and mud or mud bottom.

**CAPE KRIO** (*Lat. 36° 41' N., Long. 27° 24' E.*).—At 1½ miles west-south-westward of Baba island is Cape Palamida or Dibar ban, a clear and well-defined headland, and 6 miles further west-north-west-  
10 ward is Cape Krio, which with Tekir point forms the western termination of the Dorian promontory or ancient *Triopium promontorium*. The cape at a distance makes like an island, being only connected with the main by a low narrow isthmus. The coast of the cape consists of steep cliffs, and the land 2 miles within is 1,810 feet high. The water  
15 in the vicinity of the cape is everywhere deep. See view of Cape Krio, on chart 1604.

Artificial harbours were in ancient times constructed on both sides of the isthmus; Trireme harbour, the north-western, is small and now very shallow, having only from 2 to 4 feet water, and there are also 4 feet  
20 in the entrance, which is about 26 yards wide.

**Port Phriano**, the south-eastern, is larger and deeper, the outer part having from 12 to 5 fathoms water, but the inner part is shallow. It was once protected by two substantial piers, which left an entrance 160 yards wide, but now narrowed to about 130 yards. The south-western  
25 pier, constructed of immense stones cramped together, is yet in a fair state of preservation, well above water, and extends into a depth of 9 fathoms. The opposite mole has been demolished by the swell, but its remains may be traced by the wash, and, occasionally, parts of it show above water. In case of necessity small vessels will find shelter  
30 in this little harbour, or a large ship, to prevent sinking, might be placed on the beach. In entering it is advisable to keep nearer the south-western pier.

**Cnidus.**—It is said of Cnidus that there is hardly any ruined Greek city in existence which contained specimens of Greek architecture in so many different branches. Besides the artificial harbours, a  
35 few years ago there were to be traced remains of the city walls, a celebrated temple of Venus and two others, artificial terraces for public and private buildings, theatres, and a multitude of other ruins. The Acropolis is on a hill 933 feet high, over the north-eastern angle of the  
40 city. To this day traces of the ruins are very distinct, and well worth a day's examination.

**Coast.**—Tekir point, projecting north-westward, is nearly 1½ miles northward of Cape Krio, and there are upwards of 50 fathoms water within a quarter of a mile of it. Between the point and Kuchi islet

*General charts 1898, 872, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 20' W.*

3 miles north-eastward, the coast falls back and forms a deep bight, called Tekir bay. Kuchi islet is about 6 cables in length, north-west and south-east, and is separated from the main by a deep and clear channel 2 cables wide, but the north-western end of the islet is surrounded by shoal water. Between Kuchi islet and Mersinjik bay, 4 miles farther north-eastward, the coast is irregular, with two little bays, and the salient points are foul. 5

**Mordala islet** or **Moordavan** (*Lat. 36° 46' N., Long. 27° 30' E.*), about a quarter of a mile in length, and foul at each end, lies about 3 miles north-eastward of Kuchi islet, and half a mile from the coast. At 2½ cables south-eastward of the islet is a large rock above water, but the passage between is deep, and there are 35 fathoms midway between the rock and the mainland. 10

Midway between Kuchi and Mordala islets, the coast forms Mordala bay, more than half a mile wide, about 4 cables deep, and open to the north-west. A shoal bank, about a cable in width, borders the shore, and off the western entrance point is a rock above water. In the entrance the water is deep, but at a quarter of a mile from the head of the bay there are 7 and 8 fathoms. 15 20

**Mersinjik bay**, about 1½ miles south-eastward of Mordala islet, is half a mile deep with a beach at its head, close to which is the village of the same name. There is a small cove on the western side of the bay, where coasters at times wait for cargo from the neighbouring villages. The elevated land southward of the bay is 2,580 feet high. For continuation of the northern coast of the Dorian promontory, see page 336. 25

*Charts 1604, 1898.*

**KOS** (ancient *Cos*), known to the Turks as Stanko, is an island 23½ miles in length in a west-south-west and east-north-east direction, with an average breadth of 4½ miles, though near its western end it is contracted to a little more than a mile across. It is mountainous, especially on the south and west; an elevated ridge extends along the southern side of the island, which at 6½ miles from Cape Phuka or Agios Phokas, the eastern extreme, is 2,870 feet above the sea; the height at the western end is 1,390 feet. The eastern portion of the northern side of the island is composed of a large tract of level and fruitful ground, which produces corn, silk, and wines; fruit trees everywhere abound. The population of the island amounts to about 9,500, mostly Greeks; the Turks are congregated in the town, and the Greeks in the villages, of which there are several throughout the island. 30 35 40

*General charts 1898, 872, 2836a, 2606.*

*Chart 1899, Kalimno, Kappari, and Kos channels. Var. 2° 20' W.*

- The town of Kos, or Stanko** (*Lat. 36° 54' N., Long. 27° 19' E.*), stands picturesquely on the site of the ancient city, on the shore of the semicircular bay at the eastern end of the island, and in its vicinity are groves of orange, lemon, pomegranate, fig, and other trees of the Levant. On the north side of the town is a castle erected at different dates, but chiefly by the knights of Rhodes; the walls are whitewashed and from 30 to 40 feet high, and on the northern side of the castle is a narrow entrance into a shallow lagoon. The anchorage is north-north-eastward of the castle in 10 or 11 fathoms water, mud and weed, or in any convenient depth. There is no other port or anchorage in the island.

- Vessels bound through Kos channel should be careful in rounding the eastern end of Kos island, in twilight or at night, to avoid the low sandy point named Luro,  $2\frac{1}{4}$  miles eastward of the town; it is difficult to distinguish, and as the water cannot be seen over it, a mistake might easily be made.

**Light.**—A light is shown from the head of the pier at Kos.

- Communication.**—Steamers of the Pantaleon Company call weekly.

**Kum point**, the northern extreme of Kos island,  $1\frac{1}{2}$  miles north-north-westward of the town of Kos, is low, sandy, and surrounded by shoal water which extends north-north-westward nearly three-quarters of a mile.

- LIGHT.**—At about 165 yards within Kum point is a white house with a mast on it, from which a light is exhibited at an elevation of 59 feet above the sea.

This light, with the light on Hussein point northward of it, marks the Kos channel at night. *See page 349.*

- Two-fathoms rock**, with that depth of water over it, is  $1\frac{1}{2}$  cables in length north-east and south-west, and its centre bears 349° true, distant half a mile from Kum point lighthouse. Depths less than 5 fathoms will be found a quarter of a mile north-north-westward of this shoal spot. As the shoal is steep-to, and no satisfactory marks can be given for clearing its extremity, it should be given a wide berth in passing.

- Kappari channel or Pserimon Bogazi.**—The northern coast of Kos is bordered by shoal water, which, abreast of Cape Russa of Kappari island (page 351), extends northward beyond three-quarters of a mile and nearly into the middle of Kappari channel. Vessels should keep rather on the Kappari side, where the water is deep.

*General charts 1604, 1898, 872, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

**GULF OF KOS.**—This gulf takes its name from the island of Kos, which lies at the entrance, dividing it into two channels of unequal breadth, the northern and narrower called the channel of Kos, being about  $2\frac{1}{4}$  miles wide; whilst the southern, or that between Kos and the Dorian promontory, is a little more than 7 miles wide. From the island of Kos, the gulf extends  $48\frac{1}{2}$  miles in an easterly direction, the larger portion being about 12 miles in breadth, but its inner part called Giova bay (*Lat. 37° 00' N., Long. 28° 10' E.*), for the last 6 miles forms a peculiar canal-like shape, and is from 3 to  $1\frac{1}{2}$  miles wide. The water in the gulf is of great depth, gradually decreasing, however, towards the eastern end, where it is available for anchoring.

**Aspect.**—The scenery is magnificent; the inner part, bounded on the north by precipitous mountains, falls in a series of cliffs nearly to the water's edge. On the southern side there is a succession of broken hills and deep ravines, with small patches of cultivable ground, in places well watered, and covered with luxuriant vegetation.

**People.**—There are but few inhabitants or villages near the coast, which is only visited at certain periods by husbandmen or shepherds; but the numerous remains of both ancient and modern buildings prove that in former times it must have been densely peopled.

**Malaria.**—In the summer months, from June to October, or in some seasons even before this period, the gulf, at the upper part particularly, is abandoned by the few inhabitants in order to escape sickness, which, combined with the absence of fresh water, may account for the scantiness of the population.

In all the small ports or inlets on the south-eastern side of the gulf, where alluvial deposits have extended the mouths of the small streams which run into the sea,—the care necessary to keep them clear being wanting,—they have become in most instances a pestiferous swamp, the exhalations from which are most prejudicial to human life, and perhaps form an additional reason why the secure and beautiful harbours in that part of the gulf are untenanted.

**Water.**—There appears to be a great want of fresh water on the coast in every part of the gulf, and although the Turks have tried to remedy the evil, by constructing large and solidly built tanks in almost every small nook along the northern side, yet, from the scarcity of inhabitants, the channels which feed them from the sides of the hills are not kept clear, and therefore the supply which should run into them during the rainy season is wasted, consequently they are generally empty, or the water is bitter and unwholesome.

The streams which water the small plains find an outlet in the low marshy ground in the ports and inlets, but, owing to the flat nature

*General charts 872, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

of the land, are salt some distance in, and can only with difficulty be made use of for watering, by carrying barricoes or small casks up the valleys.

- 5 **Winds.**—The winds in the gulf are irregular, but during summer land and sea breezes have been experienced.

- SOUTHERN SHORE of the GULF.**—From Mersinjik bay (*see* page 333), the northern coast of the Dorian promontory trends eastward for 6 miles to the head of a bay called Keormen liman, then  
10 north-north-eastward 3 miles to Cape Shuyun (*Lat.* 36° 49' *N.*, *Long.* 27° 40' *E.*) or Shah-hin burnu, projecting from the high land, elevated 1,140 feet, 1¼ miles within it. The high mountainous land within this part of the promontory is from 2,580 to 3,850 feet high. The coast from Cape Shuyun trends eastward to the creek of the  
15 Dorian isthmus, a distance of 19 miles, forming a succession of small sandy bays with low rocky points, the land gradually rising within to the elevated ridge which runs through the eastern part of the promontory.

- 20 **Mount Emeji**, a bold rocky elevation, 2,440 feet high, is nearly a mile inland; its extremity forms Cape Emeji, 8¾ miles eastward of Cape Shuyun.

- Shoal.**—At 3½ miles eastward of Cape Emeji are three points, named Uch Chatal; three-quarters of a mile beyond the eastern is a rocky shoal with 1½ feet water on it. The shoal is nearly one-third  
25 of a mile in length within the depth of 5 fathoms, and about the same distance from the shore; between, there are from 5 to 18 fathoms water.

- Anchorage.**—There is no anchorage anywhere along the coast, though here and there, close in-shore, a vessel with steam power might  
30 drop an anchor for temporary purposes with off-shore winds.

- Murdubek bay**, in the south-eastern part of the Gulf of Kos, is about 3 miles deep and two miles wide, with one or two little bays, the salient points of which are foul. There are anchoring depths round the inner part of the bay, but it is open to the westward, and there is  
35 no shelter except with off-shore winds. A small inlet, known as Dorian creek, in the southern part of the bay, and bearing 151° true from Morghébet point, has only accommodation for small vessels; a sunken rock lies off its east point of entrance. *See* view on chart 1604.

- 40 From Murdubek bay the whole coast north and eastward is wild, broken, and indented with numerous bays and inlets with projecting points.

*General charts 872, 2836a, 2606.*

*Plan of Yedi Atala on 1533. Var. 2° 10' W.*

**Atmak point** (*Lat. 36° 51' N., Long. 28° 02' E.*).—Morphébet point, on the northern side of the entrance to Murdubek bay, is surrounded by shoal water; at one mile northward of it is an irregular tongue of land projecting 6 cables seaward, and also foul, named 5  
Atmak point. Between the two points is an inlet nearly a mile deep, converging to its head where a stream runs into it.

**Shoal.**—West-north-westward of Atmak point is a shoal more than  $1\frac{1}{2}$  cables in length north-west and south-east, on which the sea breaks. It is separated from the shoal ground surrounding Atmak point by a 10  
passage about a cable wide, with 10 fathoms water in mid-channel.

**YEDI ATALA ISLETS.**—Between Atmak point and Koyun cape, 3 miles 13° true from it, the coast forms a bight 2 miles deep (*see* view on chart 1604), and in the south-eastern part is a chain of four islets named Yedi Atala, extending over a space of more than  $1\frac{1}{2}$  miles, 15  
and covering an area within sufficiently large for several vessels. A convenient anchorage is inside the third islet, counting from the north-east, and off the entrance of a little creek. The channel in between the second and third islets is narrow, and a reef runs off from the south-west end of the second islet, but it can be seen. There is no ship 20  
channel between the western islet and the next one. The entrance channel to the little creek just alluded to is less than 100 yards wide; there are 13 fathoms in it, and, though there is room inside for a small vessel, there is no inducement to enter.

**Rock.**—Vessels intending to anchor in either of the bays south- 25  
ward of the islets can enter by the western channel, though there is an awkward rock in the centre, with  $2\frac{3}{4}$  fathoms water on it, which can, however, be avoided by keeping near the western islet; the shore on the southern side of the channel is shoal, and the passage southward of the  $2\frac{3}{4}$ -fathoms rock is not recommended. The best anchorage is in 30  
15 fathoms, nearly in the centre of the western bay.

**Three-foot rock.**—This rock, 3 feet under water, is difficult to 35  
see, as it forms a pinnacle on which the sea never breaks. It lies 343° true from the centre of the islet in the middle of the bight and northward of the Yedi Atala islets, distant 2 cables from the islet and  $3\frac{1}{2}$  cables from the shore. The rock also lies on the line joining the islet to the bluff cliffy point on the north. There are 38 fathoms water half a cable westward of the rock.

*Chart 1604, The Gulfs of Kos, Doris, and Symi.*

**Karamuk rocks** (*Lat. 36° 55' N., Long. 28° 03' E.*).—Between 40  
Cape Koyun (northward of Yedi Atala islets) and Cape Balisu,  $1\frac{1}{2}$  miles farther northward, the coast forms another bight a mile deep; at a quarter of a mile off the south-western face of Cape Balisu is a

*General charts 1604, 872, 2836a, 2606.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

danger named Karamuk rocks, with less than 6 feet water on them, about 2 cables in extent, with 7 fathoms water between them and the shore. Balisu bay, on the northern side of the cape, more than  $1\frac{3}{4}$  miles  
5 deep, is open to the westward, shallow at its head, and affords no anchorage.

From Lunguiz point, on the northern side of Balisu bay, the Gulf of Kos narrows considerably, being here only about 5 miles wide, and hence to its head, a distance of about 14 miles, takes the name of  
10 Giova bay.

At  $2\frac{1}{4}$  miles eastward of Lunguiz point is the entrance to Guzlemek cove,  $1\frac{1}{2}$  cables wide, which penetrates three-quarters of a mile in a curve south-eastward and south-westward, with depths of 5 to 23 fathoms, except off the projecting point on the west side, and at  
15 the head, where there is a shoal bank. Near the head the depth is 9 fathoms.

Kem rocks, above water and sunken, extend one-third of a mile east and west, close off a projecting point nearly 4 miles eastward of Lunguiz point. The rocks are steep-to, with 37 fathoms close outside; at  
20  $1\frac{1}{2}$  cables eastward of them is a shoal of  $1\frac{1}{2}$  fathoms, which is half a mile west-north-westward from Gharb point, at the entrance to Port Deremen.

*Plan of Port Deremen on 1533.*

**PORT DEREMEN** or **Deremen Buki**.—The entrance to  
25 this port is  $4\frac{3}{4}$  miles eastward of Lunguiz point, the coast between forming three bays or inlets, with patches of rock and shoal water round the salient points, but there are no off-lying dangers. Port Deremen has two unequal arms running southward; the westernmost, called Port Gharb, is narrow and three-quarters of a mile deep,  
30 with from 7 to 17 fathoms water, but of no use, except in case of necessity.

The eastern arm, Port Deremen proper (*Lat. 36° 55' N., Long. 28° 12' E.*), is more commodious, though narrow, and indented with creeks on either side; it is a little more than a mile long, with  
35 depths of from 5 to 17 fathoms, mud bottom.

The entrance to Port Deremen is between Gharb point on the west and Pelid and Daiiri islets on the east; the latter islet, the larger of the two, is 150 feet high and 4 cables southward of the former.

**Shoals**.—A rock, with  $2\frac{3}{4}$  fathoms of water on it, lies one cable  
40 southward of Pelid islet, and a shoal bank extends northward from Daiiri islet, but both these dangers are out of the usual track.

**Directions**.—In proceeding into Port Deremen, keep in mid-channel and anchor where convenient; the small promontory on the

*General charts 1604, 872, 2836a, 2606.*

*Plan of Port Deremen on 1533. Var. 2° 10' W.*

eastern side of the port should be given a berth of nearly a cable, so as to avoid the spit running off it.

**Water.**—At the head of the eastern arm there is much swampy ground, and three streams which run into it are lost. By carrying 5  
barricoes up the small valley in the south-western corner a little water may be procured.

**Products.**—The trees on the low ground between the hills near the mouth of the streams produce great quantities of gum storax, which is annually collected and exported to Italy for fuel. 10

The tree, which only grows in the rich alluvial soil about the mouths of the small streams, much resembles the sycamore in appearance, and emits a most delicious perfume. The few men employed in gathering this gum look more like corpses than living beings, owing to the constant attacks of fever they are subject to in these unhealthy places. 15  
There are no permanent inhabitants. Wild boars are numerous, and hyænas not uncommon. Plenty of wood may be had by cutting, but it is chiefly pine, and not lasting as firewood.

*Chart 1604, The Gulfs of Kos, Doris, and Symi.*

**Seyut bay or Chanak liman** (*Lat. 36° 57' N., Long. 28° 14' E.*). 20

—This bay, north-eastward of Port Deremen, is roughly semicircular, 1½ miles wide, and possesses in the southern part an inlet fit for small vessels, with good holding ground. A stream discharges into the inlet, and a Roman paved road runs through the woody morass at its head, which shows it to have been a port of some traffic in former days; 25  
at present there are no permanent inhabitants. The islet of Yelu or Karjah, over half a mile in length, lies on the eastern side of the bay, and shelters the inlet from north-easterly gales. A small inlet, Kesr cove, lies between Port Deremen and Seyut bay.

*Plan of Shehir Oghlan islands on 1533.* 30

**SHEHIR OGHLAN ISLANDS or SENU NISI.**—At a mile northward of Yelu islet is a tongue of land terminating in Balu point, which is foul nearly three-quarters of a cable off; beyond the point are the three Shehir Oghlan islands. These islands form a snug little anchorage, and from the complete way in which they, with the coast adjacent, have been fortified, it would appear to have been 35  
formerly a place of some consequence; at present there are no inhabitants. Between the islands and nearly equidistant, or about one cable from each, there is good anchorage for small vessels in about 7 fathoms, mud bottom. (*See view on chart 1604.*) 40

**Tomb island**, the smallest of the three, so called from having a single small white marble sarcophagus on it, shelters the anchorage from north-easterly winds.

*General charts 1604, 872, 2836a, 2606.*



*Plan of Shehir Oghlan islands on 1533. Var. 2° W.*

**Snake island**, the northern and next in size, abounds in those reptiles, and has evident marks of a line of fortifications running round it, and many remains of square buildings.

5 **Castle island**, the largest of the three, is nearly half a mile in length east and west, and from the western end a tongue of land projects north-eastward, forming a snug little bight on that side of the island. Towers and walls on this island, beautifully built, were a few years ago to be distinguished, though, being overgrown with shrubs  
10 and trees, some trouble was requisite. On the eastern and highest end there appears to have been a sort of citadel, in the Hellenic style, but round the other parts of the island the architecture is chiefly Cyclopean. The towers standing at intervals round the eastern end were all in good preservation.

15 The main coast eastward of the islands was also covered by similar walls and towers, and many broken sarcophagi, all of which had been violated. The whole point on the mainland opposite the islands is thickly covered with shrubs, which render it difficult to make much research among the ruins; enough, however, was seen to show that it  
20 must have been a place of some importance.

Castle island forms, with Balu point (*Lat.*  $36^{\circ}59' N.$ , *Long.*  $28^{\circ}14' E.$ ), south-westward of it, a bay about three-quarters of a mile deep, with a petrified beach at its head. A little valley runs inland from the head of the bay; it is uncultivated, but rich in natural vegetable pro-  
25 ductions; wild clover and myrtles of great height are plentiful, as well as many other flowering shrubs.

**DANGERS.**—A spit, on which is a rocky shoal partly awash, called Duck rock, extends about a quarter of a mile westward from Castle island; a spit also extends half a cable off the south-eastern  
30 point of the island, with  $2\frac{1}{4}$  fathoms water on it. Around the north-east point of the same island shoal water extends from two-thirds of a cable eastward to nearly one cable northward, with  $3\frac{1}{2}$  fathoms half a cable farther in the latter direction.

At  $2\frac{3}{4}$  cables northward from the north-east extreme of Snake island,  
35 with the eastern point of Castle island a little open eastward of Snake island, is a rocky shoal about half a cable in length, with  $2\frac{1}{2}$  fathoms on it. The passage between this shoal and Snake island is clear, and at a cable from the island the depths are from 7 to 17 fathoms.

**Directions.**—Vessels from the north-east, when about three-  
40 quarters of a mile from the islands, should keep Tomb island open its breadth westward of the point of the coast opposite, and proceed in, nearly on this line, passing midway between the point and Tomb island; when the southern side of Snake island is open south of the southern end of Tomb island, steer towards the low hummock on the

*General charts 1604, 872, 2836a, 2606.*

*Plan of Shehir Oghlan islands on 1533. Var. 2° W.*

northern end of Castle island until past Tomb island, then edge to the southward and anchor.

In entering by the south channel, keep near the point of the coast, so as to avoid the shoal water extending from the eastern point of Castle island, and steer northward with the mainland coast aboard until nearly up to Tomb island, when proceed as before directed. 5

Vessels of moderate draught may also enter between Snake and Castle islands by keeping in mid-channel, the shoalest water being  $3\frac{1}{4}$  fathoms, sand. The water is clear and the bottom so distinct that the depth appears much less than it really is. 10

There is anchorage in the bay southward of Castle island, under favourable circumstances, and the bottom is mud, though the water is rather deep, but it is exposed during westerly winds to the whole fetch of the sea in the gulf. 15

**Water.**—There is a small spring on Castle island, from which water was obtained sufficient for a crew of 80 men.

*Plan of Port Gallipoli on 1533.*

**PORT GALLIPOLI** (Lat.  $37^{\circ} 00' N.$ , Long.  $28^{\circ} 17' E.$ ).—

This port, which still bears its ancient name, is about three-quarters of a mile eastward of the Shehir Oghlan islands, and affords good and secure anchorage. On the northern side of the entrance is Bekchi islet, a quarter of a mile in length, and from it a rocky spit extends 3 cables westward, having on it from 3 to  $4\frac{1}{2}$  fathoms water, but near its extremity are shoal heads with only  $1\frac{1}{4}$  and  $2\frac{3}{4}$  fathoms. No clearing-marks can be given owing to the nature of the coast, but the distance from the extremity of the spit to the south shore of the entrance is nearly half a mile, and the southern side should be kept aboard. The centre of Snake island in line with the point west of the port leads on to the spit. 20 25 30

The port is upwards of a mile deep, having from 23 to 7 fathoms water. Two streams run into the sea at its head through low alluvial soil, and near the mouths of the streams oysters are plentiful; the water, as usual, is not fresh until some distance up. On either side of the low ground is a conical hill, on each of which are the remains of ancient forts. A small farm lies up the valley, where milk and cheese can at times be procured. 35

It is advisable never to sleep ashore in summer or autumn, as the malaria is dangerous.

The plain at night abounds with wild boars and hyænas, whose cries, mingled with the barking of dogs and whining of jackals, render the concert anything but pleasing. There are very few, and those only occasional, inhabitants. 40

*General charts 1604, 872, 2836a.*

*Plan of Port Gallipoli on 1533. Var. 2° W.*

**Danger.**—In entering Port Gallipoli from the eastward, care should be taken to avoid a reef which lies 3 cables off shore, and north-eastward  $5\frac{1}{2}$  cables from the north-east extremity of Bekchi islet.

- 5 The reef, about 2 cables in length east and west, has only 4 feet water on its shoalest head, and 3 and 4 fathoms round it; at three-quarters of a cable westward of the shoal spot, the depth is 26 fathoms. It can be seen by keeping a good look-out.

- Anchorage.**—The best anchorage is in 12 fathoms, mud, about 10 3 cables from the shore at the head of the bay.

*Chart 1604, The Gulfs of Kos, Doris, and Symi.*

- GIOVA BAY and PORT.**—Between Port Gallipoli and the base of the high mountains on the north, Giova bay resembles a broad canal, being only  $2\frac{1}{2}$  miles wide, decreasing to  $1\frac{1}{2}$  miles at the port or 15 anchorage of Giova, 5 miles eastward. With the exception of the reef just mentioned, and the shoal ground bordering the low shore at the head of the bay, there are no dangers. As the water shoals gradually a vessel may anchor in any convenient depth by the lead; the holding ground at Port Giova (*Lat.*  $37^{\circ} 03' N.$ , *Long.*  $28^{\circ} 21' E.$ ) is 20 most tenacious.

- Miasma.**—The River Kadin rises a short distance within the head of the bay and inside the bar is 3 fathoms deep; it receives several strong salt springs in its passage to the sea, and these mixing with the fresh water cause such a rank and unwholesome vegetation 25 round the small swampy island in the entrance that the miasma arising from it proves fatal to the inhabitants of the small village in its neighbourhood, who are obliged in consequence to abandon their habitations for a certain time every year.

- Ancient buildings.**—Several remains of ancient buildings 30 indicate this part of the Gulf of Kos to have been the site of a town (perhaps ancient *Bargasa*), and some fortifications, and a paved road leading to Marmarice and crossing the River Giova by an ancient bridge, lead to the supposition that it was a town of some consequence. The idea is strengthened by several tombs having been found cut in 35 the cliff about 2 miles eastward of Port Giova; they are somewhat in the style of those at Petra, and evince considerable skill, as well as opulence on the part of the proprietors. The tombs are of the mixed Egyptian and Greek orders, the doors and entrances having the inclined sides; the largest is completely isolated, and cut out of the living rock, and so perfect as to be easily delineated. Some way below 40 the present bridge (an ancient one), is another, overthrown as by an earthquake; it appears to have been an ancient and admirably constructed work.

*General charts 1604, 872, 2836a.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° W.*

**Fauna.**—In the mountains and ravines on both sides of this part of the gulf wild beasts are still plentiful. Leopards, lynxes, hyænas, brown bears, wolves, jackals, and wild boars are occasionally encountered. The leopard is harmless if unmolested, but if fired at, although not struck, attacks, and is a most formidable opponent conquered only by death. The leopards and hyænas attack the cattle and sometimes do much mischief. Deer are said to be plentiful. 5

**Produce.**—The plain of Giova is only partially cultivated. The principal exports from this port and the surrounding coasts consist of valonia, corn, timber from the neighbouring forests, gum storax, and quantities of leeches. The leeches are caught in the marshes round the head of the bay, and packed in mud in small half-casks with a piece of perforated tin on the top as breathing holes; they are sent principally to Italian ports, and form a source of profit to the miserable inhabitants of this part of the coast, who look cadaverous, and are apparently not long-lived. Honey is also collected, and the quantity of wild heath and myrtle which grows all over the hills on the south side of the bay, and on which the bees principally feed, imparts a delicious flavour to the honey not often met with elsewhere. 10 15 20

**Supplies.**—There is nothing to be procured except a few fowls. Fish in great quantities may be caught with the seine, more particularly off the mouth of the River Kadin. In this river, which is a mixture of salt and fresh water, are vast numbers of large grey mullet, but they are said by the neighbouring peasants to be highly poisonous, and they never eat them. 25

**Ancient forts.**—Almost all the eminences surrounding the gulf have marks of fortifications of ancient date. Altin Sevresi (*Lat. 36° 56' N., Long. 28° 17' E.*), south-eastward of Seyut bay, 1,500 feet high, and nearly inaccessible, has the ruins of a very strong fort on it. 30

**Elevated plains.**—On the elevated plains which lie among the mountains in this direction are occasionally numerous flocks and herds, and droves of camels, driven here during the dry season when herbage fails in the lower country. 35

**NORTHERN SHORE of the GULF.—Aspect.**—From Port Giova westward to Keramos the land on the northern side of Giova bay is of a highly interesting character, rising precipitously from the water's edge upwards of 3,300 feet, clothed with the brightest verdure, and crowned with forests of oaks, pines, elms, &c. Mingled with towering rocks, and intersected with deep ravines (the haunt of numerous wild beasts), it has an appearance of primeval grandeur not often met with, and forms a strong contrast to the land on the 40

*General charts 872, 2836a.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

opposite side of the bay, where the hills are of a tamer nature, softer aspect, and of a much more moderate elevation.

**Akbuk bay.**—Mount Keranda (Keram dágħ), on the meridian of 28° 10' E., is 3,160 feet high, and a little westward of this meridian is the promontory of Akbuk, projecting nearly 1½ miles south-eastward, terminating in the cape of the same name, with Akbuk bay on its north-eastern side. The south-western part of the head of the bay is shoal and rocky, but on the northern side anchorage may be had in 14 fathoms water, sand and weed. On the western side of the promontory is another bay, but smaller, known as Tcham Altee, with a beach at its head, and open to the southward. *See view on chart. 1604.*

**Keramos bay** is 6½ miles westward of Cape Akbuk; the coast between is nearly straight, and is the base of elevated land rising from the sea, 1,870 feet high, with deep water all along it. Vessels in Keramos bay should anchor near the shore, as the water is deep, there being 17 fathoms, stiff mud, at a third of a mile off. The southern extreme of Cape Akbuk should be in line with or just open of the bluff with a little rocky islet off it, about 2½ miles eastward of the bay. It is exposed to southerly winds, but there is no great fetch for the sea.

**Supplies.**—Neither wood nor water can be procured, but fish may be caught with the seine.

**Oren point**, on the south-western side of the bay, is steep-to; but Keramos point, rather more than a mile westward of it, should be given a berth of half a mile, as the water round it shoals suddenly.

Vessels may also anchor, if necessary, in the bight westward of the latter point, but it is not so well protected as Keramos bay.

**Keramos point** (*Lat. 37° 01' N., Long. 27° 59' E.*) forms the south-west extreme of a small plain about 1½ miles square, on which are the ruins of the ancient city of *Keramos*, which, though not of great extent, contained some highly ornamental buildings and temples which now lie overthrown, apparently by an earthquake. There is still enough left to show the former wealth and consequence of its inhabitants. The number of sarcophagi is very great, and they are arranged outside the principal gate on the east side of the city in two lines, forming a continuous avenue of considerable length; they are very massive in structure, and have all been opened.

**Ancient buildings, &c.**—Outside the city are some Corinthian capitals and fluted columns, with well-executed representations of amphoræ and wreaths of grape vines, which lead to the supposition that on this place a temple of Bacchus once stood; the columns are in excellent preservation, but overgrown with shrubs and trees.

*General charts 872, 2836a.*

*Chart 1604, The Gulfs of Kos, Doris, and Symi. Var. 2° 10' W.*

The walls of the city, which are plainly to be traced, and in some places perfect, are principally Cyclopean, mixed with Hellenic masonry, and defended by square towers built in them at unequal intervals. They are carried up the foot of a range of hills joining the north side of the city, on which side, crowning one of these hills, is a square fort surrounded with triple walls, probably the citadel. Many remains of massive and large buildings exist, both within and outside the city walls, but the most interesting and perfect is a gateway of white marble standing in solitary grandeur outside the walls in a cornfield. It is in excellent preservation, most elaborately sculptured, and looks nearly as fresh as if it were but recently erected. It combines the Egyptian style with the Greek, as the sides fall inwards from the base, but the ornamental parts are Greek in character and design. The same mixed style of architecture is met with in the gulf farther eastward.

Without the city, to the eastward, is the base of a very large building, of considerable elevation, and built of immense squared stones. The superstructure no longer exists to enable a judgment to be formed as to the nature of it.

**Stream.**—The plain is watered by a small stream which runs through the centre in winter and falls into the sea at Oren point. The stream is dry during summer, except some stagnant pools, which, in July and August, cause the vicinity to be very unhealthy.

**COAST.**—Between Keramos point and Cape Vasilika (*Lat. 37° 00' N., Long. 27° 50' E.*), or Dumuz burnu, 7 miles westward, the coast forms low shingle points with cultivated plains between them, the hills in the rear being well wooded and backed by high mountainous land. A small village stands about 3 miles westward of Keramos point; farther on, two large tanks, one at 3½ miles, the other at 2 miles, from Cape Vasilika, are conspicuous objects, and, with their domes and white-washed walls, contrast pleasingly with the dark foliage of the hills.

**Vasilika bay**, on the western side of the cape, is about three-quarters of a mile deep, and its head and north side are bordered by a shoal bank; in its north-western corner is a well-sheltered anchorage for small vessels in 13 fathoms water, but there is nothing to be obtained here. Cyclopean and other ancient ruins are on the west and north shores of the bay.

A small shoal spit extends off from the western side of Cape Vasilika, and another from the point next west of the entrance to the bay.

**Alakishli bay.**—Westward of Vasilika bay are several indentations and projecting points surrounded by rocks. Alakishli bay, nearly 7 miles from Vasilika, has anchorage for small vessels during off-shore

*General charts 872, 2836a.*

*Chart 160½, The Gulfs of Kos, Doris, and Symi. Var. 2° 20' W.*

winds, off the middle of the sandy beach. Here are the ruins of an ancient fortress. Hermo or Eki Kardash islet lies about 4 cables eastward of the southern point, with a shoal between it and the point. All  
5 along this part of the coast there are great quantities of ironstone.

**Orak island.**—Westward  $2\frac{3}{4}$  miles from Hermo islet is the island of Orak, a mile in length north-north-west and south-south-east, and between it and an irregular arm of land projecting eastward are two little islets with shoal water around them; the whole together cover  
10 a bay or inlet named Kishle Buku. At the head of the inlet, on the west, the depth is from 10 to 20 fathoms, but the holding ground is very indifferent. On the north side of the inlet are ancient ruins and a tower.

**Water.**—The water here should not be used, as some obtained  
15 from a well made a whole ship's company ill.

**Kara Ada.**—This narrow island is  $3\frac{3}{4}$  miles in length in a north-west and south-east direction, and its eastern end is nearly 5 miles westward from Orak island. A little islet or rock lies close off its southern point, where there is a small inlet, and the northern coast is  
20 bordered a little off by shoal water. The island has evidence of ancient fortifications on its summit; in its northern part, towards the centre, is a remarkable cave, out of which flows a volume of hot water, which, gradually cooling as it approaches the sea, affords a snug retreat to the seals which are always found located there.

**Kara Ada** lies parallel with the coast, with its north-western end south of Budrúm; the narrowest part of the channel which separates it from the main is about half a mile wide and 12 fathoms deep, but either side is bordered a short distance off by shoal water. Vessels under steam may take this channel on their way to and from Budrúm,  
30 but a sailing vessel should be prepared for baffling winds.

*Chart 1899, Kalimno, Kappari, and Kos channels.*

**BUDRÚM BAY** (*Lat.  $37^{\circ} 02' N.$ , Long.  $27^{\circ} 28' E.$* ).—Taking Khatar point as the western entrance point, Budrúm bay is  $1\frac{1}{4}$  miles in length northward and about  $1\frac{1}{4}$  miles wide at the entrance.

**Khatar point** is surrounded by reefs, and a detached patch lies off it, with a rock about a foot above water, on which stands a stone column 13 feet high.  
35

**Sighi shoals.**—To the southward of Khatar point are two other small detached patches, named Sighi shoals, the northern patch being  
40 separated from the rock above water, just mentioned, by a distance of a third of a mile, with 17 fathoms water midway. The Sighi shoals are  $1\frac{1}{2}$  cables apart, the north-eastern shoal having  $2\frac{3}{4}$  fathoms on it, the south-western  $2\frac{1}{2}$  fathoms, and between the two there are

*General charts 160½, 872, 2836a.*

*Chart 1899, Kalimno, Kappari, and Kos channels.* Var.  $2^{\circ} 20'$  W.  
20 fathoms water (see views taken on Sighi shoals, C to F on chart 1604). The outer Sighi shoal bears  $179^{\circ}$  true, distant two-thirds of a mile from Khatar point, and vessels should not pass north of it.

The little islet of Utchian, bearing  $240^{\circ}$  true, open southward of Guirejik island, leads southward of Sighi shoals; Kaplan point, on the western side at the head of Budrúm bay,  $0^{\circ}$  true, open of Deguir point, leads eastward of the shoals. Mount Elias, of Kos island, kept more than twice its breadth open of Guirejik island, also leads south of Sighi shoals.

*Plan 1606, Budrúm.*

The shores of Budrúm bay are bordered by a narrow bank, and about a third of a mile southward of Meshrik point, on the eastern side, is a spit extending from a small rocky point, to which point it is necessary to give a berth of 3 cables.

**Rocky patch.**—Kalessi point separates the bay of that name on the east from Budrúm harbour on the west, and on the point is situated the castle of Agios Petros. South-eastward,  $1\frac{3}{4}$  cables from the south-east angle of the castle, is the south-west end of a rocky patch with a least depth of  $2\frac{1}{2}$  fathoms over it.

The castle of Agios Petros is whitewashed, and Agios Georgio point,  $3\frac{3}{4}$  cables eastward, is walled round, with the base of the wall in the water.

**Anchorage.**—The anchorage is in from 11 to 12 fathoms, mud and weeds, with the south-eastern angle of the castle bearing about  $33^{\circ}$  true, Kaplan Kalessi tower  $306^{\circ}$  true, and Deguir point  $230^{\circ}$  true, or a little further off if necessary, protected in a measure from southerly gales by Kara Ada. Kaplan Kalessi tower over Kaplan point is all that remains of the ancient fortress of Salmacis.

**Budrúm harbour** (*Lat.*  $37^{\circ} 02'$  N., *Long.*  $27^{\circ} 28'$  E.) is a circular basin about a third of a mile in diameter, with the ruins of ancient moles on either side of the entrance. The deepest water is about the centre, and the bottom consists of weed, but the best anchorage is rather westward, being more out of the way; it is very shallow all round near the shore, fast filling in, and fit only for small vessels. It is surrounded by a complete amphitheatre of hills, and encircled by the remains of the ancient walls of *Halicarnassus*, on the site of which city the modern town of Budrúm is erected.

**LIGHTS.**—Two lights, placed vertically, are exhibited from a pole on the small islet on the west side of the entrance to Budrúm harbour; the upper light is elevated 52 feet above the sea.

**Ancient remains.**—The ancient walls are plainly visible, and in some places in good preservation; within its circumference are the

*General charts 1899, 1604, 872, 2836a.*



*Plan 1606, Budrúm. Var. 2° 20' W.*

ancient theatre and some columns of a temple to Bacchus, with the base of a large building which might have been that of a mausoleum. Many fragments of basso-relievo are amongst the ruins, but the most  
5 interesting of ancient remains, those of the famous tomb of Mausolus, were embedded in the walls of the castle, the sculptures from which are now in the British Museum. The small plain surrounding the town is covered with ancient remains, but difficult to find, as the ground is cultivated with figs, grapes, corn, &c.

10 **Castle of Agios Petros.**—The castle was built by the Knights of St. John, and has many traces of the knights in escutcheons in the walls of the battlements. Its whitewashed walls, with the surrounding houses, groves, and gardens, form a pleasing aspect from a distance. See view on plan 1606 and opposite.

15 **Supplies.**—Provisions are obtainable, but water is scarce and indifferent.

*Chart 1899, Kalimno, Kappari, and Kos channels.*

- **Gumbet bay.**—There is anchorage in Gumbet bay, westward of Budrúm bay, in 14 or 15 fathoms, but it is open to the south, the  
20 shore all round is bordered by shoal water, and there is nothing to attract a vessel there.

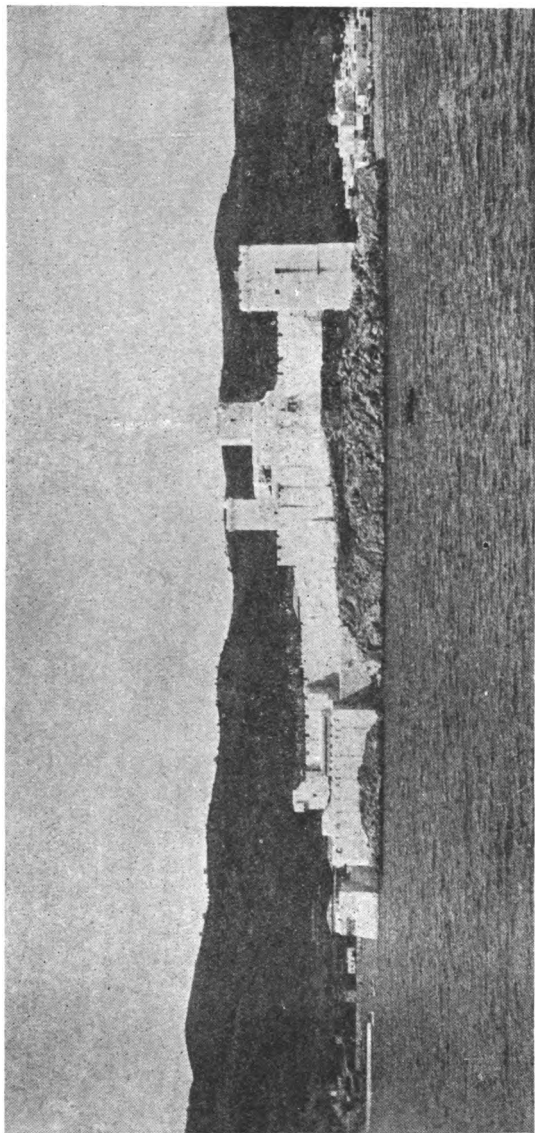
**Petasa and Bitech bays.**—These two bays are separated from Gumbet bay by a tongue of land projecting  $1\frac{3}{4}$  miles south-south-westward. Close to its south-eastern part is Guirejik island, two-thirds of  
25 a mile in length north and south, with an islet between its northern end and the coast. There is a passage for small craft between the islands and the main, but none between the islands themselves.

The tongue of land forms, with the coast westward of it, a deep bight, nearly in the centre of which is the islet of Parthena or Tchelehee  
30 (*Lat. 37° 00' N., Long. 27° 23' E.*), about a third of a mile in length, and between the islet and northern shore is a mud bank with  $4\frac{1}{2}$  fathoms water on it. Petasa bay, in the north-eastern corner of the bight, is frequented by small vessels, and is secure in any wind. Bitech bay, in the western part of the bight, affords anchorage in from  
35 15 to 17 fathoms, good holding ground, with the extreme of Bitech point about 185° true, and the north extreme of Parthena islet 90° true. The shore all round the bight is bordered by shoal water.

**Water.**—In the little cove on the western side of Bitech point is a small run of water. The adjacent country is fertile, and well in-  
40 habited.

**Aspat rock.**—At  $2\frac{1}{4}$  miles south-south-westward from Bitech point, and a little more than three-quarters of a mile from the coast

*General charts 1604, 1898, 872, 2836a.*



Castle of Agios Petros, Budrúm.  
View taken from the anchorage, 2 cables southward of the castle.



*Chart 1899, Kalimno, Kappari, and Kos channels. Var. 2° 20' W.*  
of Cape Petera, is Aspat rock above water, with 20 fathoms close east of it. On its north-west side is a sunken rock, with less than 6 feet over it, and 6 to 10 fathoms close to.

**Utchian islet**, less than a cable in diameter, with shoal water extending from its southern side, lies a third of a mile southward of Cape Petera, and between there are 10 to 18 fathoms water. 5

**KOS CHANNEL**, between the shoal bank extending from Kum point (the northern extreme of Kos island) on the south (*see* page 334), and Magpie rock on the north, is contracted to  $1\frac{1}{2}$  miles in width, with depths of from 14 to 22 fathoms. The coast of the mainland on the northern side of the channel is irregular, indented with bays, and bordered by shoal water. 10

**Magpie rock**, with only 4 feet water on it, lies  $248^{\circ}$  true, distant half a mile from Arkialla point, and the same distance from the land to the northward, with 7 fathoms between it and the shore. *See* views taken on Magpie rock, A and B on chart 1604. 15

The southern end of Kara Ada,  $86^{\circ}$  true, open southward of Utchian islet, leads southward of the rock; and Chuka islet, well open south-westward of Pasha rock, leads south-westward of it. 20

**Pasha rock**, which is just above water, lies a quarter of a mile from Hussein point, and is surrounded by a reef which extends nearly 2 cables north and south.

There is a narrow channel inside the reef, through which 3 fathoms water may be carried by keeping Karabaghla point  $343^{\circ}$  true just open westward of Ereno point. 25

Cape Petera,  $90^{\circ}$  true, open southward of Arkialla point, and the summit of Kato island in line with the eastern end of Karabaghla island, bearing  $336^{\circ}$  true, lead respectively south and west of Pasha reef. 30

**LIGHT.—Hussein point** (*Lat.  $36^{\circ} 58' N.$ , Long.  $27^{\circ} 18' E.$* ).—A light, elevated 82 feet above the sea, is exhibited from a mast on a white house situated 60 yards within Hussein point. This light, and the light on Kum point, the northern extreme of Kos island, mark the Kos channel at night. *See* page 334. 35

*General charts 1604, 1898, 872, 2836a.*

## CHAPTER VIII.

COAST OF ASIA MINOR FROM KOS CHANNEL TO CAPE HYDRA,  
INCLUDING THE GULFS OF MANDELYAH, SKALA NUOVA AND  
SMYRNA, WITH THE ADJACENT SPORADES ISLANDS.

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VARIATION decreasing about  $8\frac{3}{4}$  minutes annually.

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*Charts 1899, 1546. Var.  $2^{\circ} 20'$  W.*

**Coast.**—From Hussein point, at the western entrance to the Kos channel, the coast trends northward about 8 miles to the entrance of Sandama bay (*see* page 365), and is bordered by a shoal bank, with  
5 sunken rocks in places.

*Chart 1899, Kalimno, Kappari, and Kos channels.*

**Pitta islet.**—At 4 miles northward of Hussein point and a quarter of a mile from the coast is the little islet of Pitta, with 5 and 7 fathoms water between it and the shore.

10 **Karabaghla point**,  $8\frac{1}{2}$  cables north-westward of this islet, has two large rocks above water off it, and southward of the rocks the coast is bordered by shoal water at the distance of a quarter of a mile.

**KARABAGHLA ISLAND** (*Lat.  $37^{\circ}00'N.$ , Long.  $27^{\circ}15'E.$* ),  
15 lying 3 miles north-westward of Hussein point on the north side of the entrance to Kos channel, and about  $1\frac{1}{4}$  miles from the shore, is the largest of a group consisting of about a dozen islets and rocks; Karabaghla is upwards of a mile in length north-east and south-west, and consists of two peninsulas united by a low sandy isthmus. The  
20 northern peninsula is 500 feet, and the southern 367 feet high. The island is skirted by small islets and rocks on the west and south, and at  $1\frac{1}{2}$  miles west of it is the conical islet of Atsaki, more than a cable in diameter, with depths of from 25 to 40 fathoms between.

Lodo islet, 3 cables south-westward of Lepto, at the southern end  
25 of Karabaghla, has a reef extending  $1\frac{1}{2}$  cables south-westward, and should be given a wide berth. At about  $6\frac{1}{2}$  cables southward of the south-west end of Karabaghla is the little islet of Chuka, steep-to, and one of the marks for Magpie rock. (*See* page 349 and view A on chart 1604.) Eastward of Chuka, and more than a mile from the  
30 shore, is the larger islet of Malathro, with rocks above water at either

*General charts 1604, 1546, 1898, 872, 2836a.*

*Chart 1899, Kalimno, Kappari, and Kos channels. Var. 2° 20' W.*

end, and the two Kruso islets north-westward, with shoal water round them.

The coast of the mainland eastward of the islands is bordered by shoal water, which extends off in places more than 4 cables; the passage between the islets and main is called **Karabaghla** channel, and the passage between Chuka islet and Kappari is called Chuka channel. 5

**Kato islet**, about  $2\frac{1}{10}$  miles north-north-westward of **Karabaghla**, is  $3\frac{1}{2}$  cables in extent, with an irregular rocky coast surrounded by shoal water. A circular tower stands on the north-east extreme of the islet. 10

**Sponge rock**.—Equidistant from and a little eastward of a line joining the north-eastern ends of **Karabaghla** island and **Kato islet**, and three-quarters of a mile from the shore is **Sponge rock**, with 6 fathoms water on it. **Hussein point** lighthouse in line with the north-eastern extreme of **Karabaghla** island,  $145^\circ$  true, leads westward of the rock; the **Kruso** islets in line with the eastern extreme of **Karabaghla** island,  $180^\circ$  true, lead eastward of the rock. 15

**Kardak** or **Heipethes rocks**, two in number, lying  $2\frac{1}{4}$  miles westward of **Kato islet**, are small and about  $1\frac{1}{2}$  cables apart, with 19 fathoms water between them; both rocks are foul about one cable off on their south-eastern sides. Between the rocks and **Kato islet** the water is deep. 20

**KAPPARI ISLAND**.—This island (*Pserimos*) is 4 miles in length north-west and south-east,  $2\frac{1}{2}$  miles wide, and its north-eastern part is 835 feet high, with an irregular coast line indented with bays. At half a mile southward of **Vasiliki point** (the north-eastern point) is **Sikua**, a large rock above water with sunken rocks on its north-western side; a cable eastward of the line joining the rock and point is a 3-fathoms shoal, which should be avoided. 25 30

**Cape Russa** (*Lat.  $36^\circ 55'$  N., Long.  $27^\circ 12'$  E.*), the south-eastern extremity of the island, is the termination of a tongue of land projecting upwards of a mile in the above direction; nearly a mile westward from **Cape Russa** is **Teseremi rock** or **Erenes nisi** above water, one-third of a mile from the shore. **Cape Sphuri** or **Krevana** may be considered the south-west extreme of **Kappari** island, and about 2 cables north-north-westward of the cape is a reef with a rock above water, named **Tathuro nezglá**, close to the shore. One third of a mile farther northward is the entrance to **Pseremo cove**, an inlet a third of a mile deep, with beach and the village of **Pseremo** at its head. 35 40

**Nikro** or **Plati**.—On the western side of the island is the narrow island of **Nikro** or **Plati**, with an irregular coastline and skirted here and there with rocks; it is over a mile in length north and south, with

*General charts 1604, 1546, 1898, 872, 2836a.*

*Chart 1899, Kalimno, Kappari, and Kos channels. Var. 2° 20' W.*

Nikrothikes islet  $1\frac{1}{4}$  cables off its northern end and 3 fathoms water between them. Nikro is connected to Kappari by a ridge with 4 and 5 fathoms water on it, and the passage is nearly half a mile wide.

- 5 **Kappari channel** is between Kappari island and the shoal water bordering the northern coast of Kos island. *See* page 334.

**PORT GUMISHLU** (ancient *Myndus*).—On the mainland, about three-quarters of a mile northward of Karabaghla point, is a bluff 290 feet high, eastward of which is Port Gumishlu, a snug inlet  
10 extending 3 cables northward, having from 10 to 4 fathoms water, sand and mud bottom. On the eastern side of the entrance is an islet, connected with the main by the remains of an ancient pier, and the deep water channel here is only about 40 yards wide, with a depth of 12 fathoms; the shore around the port is a sandy beach.

- 15 **Rock**.—A rock, with less than 6 feet water over it, lies midway between the shores of the port, about  $1\frac{1}{2}$  cables north-north-eastward from the east entrance point. The breadth of the channel westward of this rock between the 5-fathoms lines is 50 yards, and the depth 10 fathoms. The walls of Myndus extend over the heights north-east-  
20 ward at an elevation of 500 feet, forming a square of about 700 yards, within which are the remains of pedestals, a temple, theatre, and other ruins.

**Shoal**.—Paleo point is the name given to the north-west extreme of the peninsula which shelters Port Gumishlu, and from it shoals  
25 extend north-north-westward  $3\frac{1}{4}$  cables, the least depth being 3 fathoms. This shoal is steep-to on the west side.

*Chart 1546, Samos strait to Mandelyah gulf.*

- Pondikusa** (Lat.  $37^{\circ} 05' N.$ , Long.  $27^{\circ} 14' E.$ ) and **Keramidi islets**.—These two islets lie about 2 miles northward of the entrance  
30 to Port Gumishlu. Pondikusa, the larger of the two, is nearly two-thirds of a mile in length north-north-east and south-south-west, surrounded by a narrow bank, and is about 9 cables westward of Keramidi. The latter lies in an east and west direction, having some rocks at its south-eastern end, where it is separated from the coast by a  
35 channel a cable wide and 5 fathoms deep.

**Myndus rock**.—At three-quarters of a mile north-eastward from the northern end of Pondikusa is Myndus rock, with  $4\frac{1}{2}$  fathoms water on it, and lying right in the fairway of vessels passing between the two islets. Paleo point, in line with the western side of Malathro islet,  
40  $179^{\circ}$  true, leads on the rock; to pass westward of the rock the islet should therefore be brought well open westward of the point. (For the Gulf of Mandelyah or coast northward of Myndus rock, *see* page 366.)

*General charts 1604, 1546, 1898, 872, 2836a.*

*Chart 1899, Kalimno, Kappari, and Kos channels. Var. 2° 30' W.*

**KALOLIMNO ISLAND** or **GAITHURO NISI**, 5 miles west-south-westward of Pondikusa, is nearly 2 miles in length east and west, with an irregular coast, forming on the south side several little coves, and in the central part of the north side steep cliffs, on which 5 side the island is steep-to; the western end is bordered by shoal water, which extends along the southern coast, where there is a sunken rock here and there close in. The little islet of Plero or Mikro nisi, about a cable in diameter, with a sunken rock or two at its base, lies about 3 cables off the southern coast, with 22 fathoms water midway 10 between.

The distance from the eastern end of Kalolimno to the Kardak rocks, eastward, is a little under 2 miles, and from the south-western coast to Kalimno island  $3\frac{1}{2}$  miles. Both channels are clear and deep.

**LIGHT.**—At 130 yards within the eastern end of Kalolimno is 15 a white stone tower, from which a light is exhibited at 181 feet above the sea.

**Gargari islet** (*Lat. 37° 05' N., Long. 27° 06' E.*).—Northward one mile from the western end of Kalolimno is the islet of Gargari or Pita, about 2 cables in length north-west and south-east. The pas- 20 sage between is clear and deep.

*Chart 1666, Lero and Kalimno.*

**KALIMNO.**—This island is irregularly formed, its main body to the southward being about 6 miles across, and from it a peninsula ridge extends about  $6\frac{1}{2}$  miles north-westward. It is everywhere moun- 25 tainous; the central ridge forms two peaks, Mount Parasiva, 2,250 feet high, and the other, about a quarter of a mile south-eastward of it, 2,200 feet high. The coast is rugged, with several inlets, bays, and coves. The island is not very fertile, though it produces figs, wine, barley, oil, and excellent honey; for the latter it was also celebrated 30 in antiquity.

**Inhabitants.**—The inhabitants amount to about 7,000, most of whom live at the Skala, or in the town of Kalimno, which stands at the foot of a steep cliff about 800 feet above the sea. Here are the ruins of the ancient town and fortress, at a little less than an hour's 35 walk from the Skala by a good road. The inhabitants are employed as sailors, in the sponge fishery, and in agriculture.

**Sponge fishery.**—Kalimno is the head-quarters of the sponge industry, about 200 vessels and nearly all the adult males being en- 40 gaged in diving and fishing up sponges. They set out in May and return in September, visiting during that time the shores of the islands of Greece, the southern Sporades, and especially Rhodes, Crete, the whole extent of Syria, the island of Ruad, and finally Tunis; their

*General charts 1666, 1546, 1898, 872, 2836a, 2606.*



*Chart 1666, Lero and Kalimno. Var. 2° 30' W.*

vessels are so large and so well manned that they drive the Arabs and Sicilians completely out of the field. The best sponges are usually found at a depth of from 15 to 20 feet; those found in deeper water  
5 are of little commercial value. The largest and most delicate are found on the coast of the island of Stampalia, and on one or two spots on the African littoral.

**Port Kalimno** (*Lat. 36° 57' N., Long. 27° 01' E.*) at the head of a bight at the south-eastern end of the island, and open to that  
10 quarter, is a semicircular bay about 4 cables wide, shallow, and protected on the south side of the entrance by a small mole, inside which the sponge boats take shelter. The port is surrounded by a bank with little water on it, outside which the depths are from 2 to 5 fathoms, over mud and sand. The town of the Skala is built round the shore  
15 of the bay, and the lazaretto is on the northern side; on the south-west side is another small mole. There is anchorage at the entrance of the port in from 20 to 12 fathoms water, muddy bottom, with patches of sand and weeds.

The coast southward of the port is high, rugged, and steep-to.

20 **Light.**—A light is shown, at an elevation of 20 feet above the sea, from a pole 13 feet high, on the end of the mole on the south side of entrance to Port Kalimno.

**Communication.**—Kalimno can be reached by boat from Budrúm.

25 **Nera and Saphonidi islets.**—These two little islets lie off the southern coast of Kalimno. Nera, the larger, is a mile in length east-north-east and west-south-west, with shoal water around its salient points; it lies half a mile from the shore, and midway between there are from 35 to 50 fathoms water. Saphonidi or Agios Nikolaos is over  
30 half a mile in length north-east and south-west, steep all round, and  $1\frac{4}{10}$  miles south-south-westward of Nera, with deep water between.

**Linaria bay.**—The south coast of Kalimno is irregular, high, rugged, and bold, with deep water all along it. Linaria bay, on the west coast, is an indentation about two-thirds of a mile deep, and at  
35 its head is the little village of the same name. In the valley above are the principal of the ancient remains found in the island. The little islet of Khereaia or Agia Kyriaki, steep-to on the west, but foul and rocky on the north and eastern sides, lies half a mile off the northern side of the bay. Between the reef on the islet side and the shoal rocky  
40 ground bordering the northern side of the bay and coast beyond it northward the water is 32 fathoms deep.

**Telendos island,** on the west coast, is nearly  $2\frac{1}{4}$  miles in length, west-north-west and east-south-east, high, cliffy, skirted by shoal

*General charts 1898, 872, 2836a, 2606.*

*Chart 1666, Lero and Kalimno. Var. 2° 30' W.*

patches and scattered rocks here and there, with an irregular tongue of land extending three-quarters of a mile southward from the east end; Apano islet lies close southward of its western end. The island is separated from Kalimno by a passage, a quarter of a mile wide, called Telendo channel; midway between the shoal ground on either side it is clear and deep. 5

**Argano bay** (*Lat. 37° 01' N., Long. 26° 59' E.*).—From the central part of the main body of Kalimno an elevated peninsula projects about  $6\frac{1}{2}$  miles north-westward, and in the bight on the south-western side is Argano or Argynondas bay, upwards of one mile deep, with from 15 to 10 fathoms water, mud bottom, at about 3 cables from its head. The entrance of the bay is sheltered from the south-west by Telendos island, and in front of it, north-westward, is Kalavros islet, half a mile in length, north-east and south-west, and 320 feet high. 10 15

**Shoal.**—In the entrance to the bay, and 6 cables eastward from the south extreme of Kalavros islet, is a rocky patch with  $4\frac{1}{2}$  fathoms water on it.

The mountains on either side of Argano bay rise almost perpendicularly from the water's edge to a height of nearly 2,000 feet, forming a deep ravine, through which, in the rainy season, a torrent discharges into the head of the bay. H.M. ship *Antelope*, in December, 1869, sought shelter here from an approaching south-easterly gale, which increased with much violence, but continued only for a few hours, when it suddenly became calm; the night was pitch dark, the rain came down in torrents, with flashes of the most vivid lightning in quick succession, and the high land surrounding the bay added to the darkness. The calm was shortly followed by a supposed gale from the northward, with heavy squalls from N.N.W. to N.E., causing the vessel to be very uneasy and to roll heavily. At daylight, and after a most anxious night, it was determined to put to sea in preference to remaining longer; the anchors were accordingly hove up, and the vessel steamed out of what was described as one of the most dangerous little traps that a vessel could be ensnared into. Although in the bay the squalls were off the land from the northward, at sea it was blowing a strong south-westerly gale. 20 25 30 35

**Kephala**, a circular projection about two-thirds of a mile in diameter, and connected by an isthmus to the central part of the south-west coast of the peninsula, forms a little bay on its south-eastern side, where there are a few scattered houses called Emporio. The shore between Kephala and the head of Argano bay is bordered by rocks here and there, and from Toikhoi, a point half a mile north-east of Kalavros islet, they extend off nearly 2 cables. 40

*General charts 1546, 872, 2836a, 2606.*

*Chart 1666, Lero and Kalimno. Var. 2° 30' W.*

Cape Telos or Akroteri, the north-western extreme of Kalimno, lies about  $2\frac{1}{2}$  miles north-westward from the isthmus joining Kephala to the coast; the shore between is clear and steep-to, there being no danger  
5 outside one cable from it.

Glare and Nisia are two islets which extend northward nearly 8 cables from the northern end of Kalimno island; they are united by rocks, and Nisia, the southern islet, is separated from Kalimno by a narrow passage about 5 fathoms deep.

10 **Eastern coast.**—The north-east and eastern coasts of Kalimno are bold, rugged, irregular, and cut up into several bays and inlets, which are of no utility, and, except at some of the salient points, the water is everywhere deep.

*Chart 1899, Kalimno, Kappari, and Kos channels.*

15 **Port Vathi** (*Lat. 36° 58' N., Long. 27° 04' E.*).—Port Vathi or Ryna is the central of three inlets on the eastern coast; it extends in between cliffs about three-quarters of a mile to a small circular beach, where there are a few houses called Vathis. Within the head of the port is a plain, cultivated with olive trees, which extends across the  
20 island to the base of the high cliffy ridge on the west, and bounded on either side by the mountain ranges.

**Skirometo point.**—The south-eastern extreme of Kalimno, named Skirometo or Khali point, is  $1\frac{1}{2}$  miles southward of Port Vathi, and is the termination of a piece of zigzag land forming Port Katzuni  
25 or Akti, and united about 9 cables within to the main body of the island, by a neck less than a cable across. At about  $2\frac{1}{4}$  cables off the northern side of Skirometo point is Sari nisi,  $1\frac{1}{2}$  cables in length, with 24 fathoms water between. The coast from Skirometo point to Port Kalimno,  $3\frac{1}{2}$  miles westward, is of the same rugged character as be-  
30 fore, and steep-to.

**Kalimno channel.**—The passage between Skirometo point and Nikro island (*see* page 351), eastward of it, is  $1\frac{1}{2}$  miles wide, clear and deep, and called Kalimno channel.

*Chart 872, Kalimno to Rhodes.*

35 **LEVITHA ISLANDS.**—Westward of Kalimno and  $28\frac{1}{2}$  miles distant from its north-western point, and nearly 6 miles north-eastward of Liadi islets at the eastern end of Amorgos (described on page 213), is the rugged island of Kinaros, the westernmost of the Levitha group. Kinaros island is 2 miles in length east and west,  
40 1,050 feet high, irregular in shape, and with the exception of some sunken rocks close to its western extreme the water is deep all round its cliffy coast. On the southern side of the island is a narrow

*General charts 1546, 1898, 872, 2836a, 2606.*

*Chart 872, Kalimno to Rhodes. Var. 2° 40' W.*

inlet nearly a third of a mile deep, with 4 fathoms water at its head, called Pnigo creek.

**Laros island** (*Lat. 36° 59' N., Long. 26° 21' E.*), about 6 cables in length, has its north and eastern side surrounded close to by shoal water ; it lies less than half a mile eastward of Kinaros, the water between the two being 67 fathoms deep. 5

**Mavro islets.**—At 4½ miles eastward of Laros island is the western end of Levitha island, and nearly midway between are the two Mavro islets. These narrow islets, the ridge of a submarine mountain, are nearly united, being separated only by a narrow cut 5 fathoms deep ; they form a bend with the convex side to the northward, and together extend over a space of 1¼ miles east and west, with deep water all round them at 1½ cables distance. 10

**Levitha island** is rather more than 4 miles in length east and west, very irregular in shape with several bays or inlets, and towards the western end 550 feet high. The island is uninhabited. 15

Vathi bay, at the western end of the island and open to that quarter, is narrow and more than a mile deep, with irregular soundings varying from 40 to 5 fathoms at its head. Elmino point, southward of the entrance of the bay and the south-western extreme of Levitha, has shoal rocky ground extending off from it about 1½ cables. 20

**Levitha harbour**, on the southern side, is an irregular inlet nearly half a mile deep, with from 15 to 2 fathoms water, and sheltered all round. 25

**Nephri point**, the northern extreme of the island, is the termination of an irregular tongue of land extending three-quarters of a mile northward, and is surrounded by rocks. On the western side of the point is a little islet, separated by a narrow channel with 2 fathoms water ; rocks, covered and uncovered, extend 2 cables westward of the islet. The water elsewhere is deep, and there are no off-lying dangers. 30

**LIGHTS** (*Lat. 37° 00' N., Long. 26° 31' E.*).—On Spano point, the eastern extreme of Levitha island, two lights are exhibited, placed vertically, the upper light being elevated 131 feet above the sea.

*Chart 1666, Lero and Kalimno.* 35

**LERO**, the ancient *Leros*, is another irregularly formed island, its coast being indented with deep bays and inlets. It is nearly 8 miles in length, in a north-west and south-east direction, and from a little more than half a mile to about 3½ miles in breadth ; it is of no great elevation, the highest hill, Mount Kleithi, in the north-east part of the island, being only 1,060 feet above the sea. The only town, Agia Marina, on the declivity of a hill on the eastern side, is crowned by a 40

*General charts 1546, 872, 2836a, 2606.*

*Chart 1666, Lero and Kalimno. Var. 2° 30' W.*

ruined castle of the Middle Ages. The inhabitants of the island, number about 3,000, and, like their neighbours of Kalimno, find employment as sailors, sponge fishers, and agriculturists. The island is not  
 5 very fertile, but produces fruit, honey, a small quantity of wine, &c. A small garrison is maintained by the Italian government, and the island is administered by a Commandant. See view, Nikaria to Kalimno, at page 359.

**Communication** is maintained by the Pantaleon Company's  
 10 steamers, which call once a fortnight.

**Supplies.**—Supplies of provisions are fairly abundant, and the prices are moderate; fruit and vegetables are cultivated. Sheep, cattle, pigs, and fowls are obtainable.

**Lero strait** separates the islands of Kalimno and Lero. At the  
 15 northern end of Kalimno island are the two islets of Glaro and Nisia (see page 356). The little islet of Velona, or Glaro nisi, which should be given a fair berth, lies about a cable from Theapori point, the south-eastern end of Lero, with 20 fathoms water between the two. Lero strait, between Velona islet and Glaro islet, south-south-west of it, is  
 20 about 2½ cables wide and, in mid-channel, 30 fathoms deep.

**Panale bay**, on the southern side of the promontory on which the town of Agia Marina stands, affords shelter for small coasters from northerly winds.

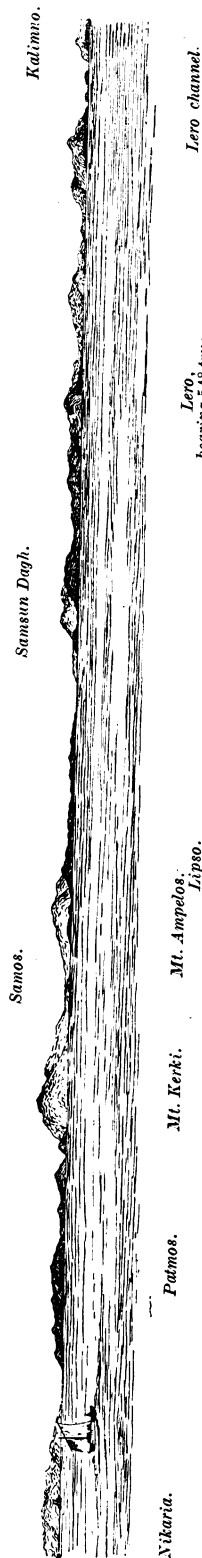
**Alinda bay**, on the eastern side of Lero, north-westward of  
 25 Panale bay, is about a mile deep, half a mile wide, and affords anchorage in from 10 to 18 fathoms water, but is exposed to easterly winds. Small coasters find shelter inside some rocks on the northern side, and also at Port Agia Marina, under the town, on the south.

The shore of the bay is skirted here and there by rocks, and in the  
 30 middle of the entrance, but rather towards the northern shore, is a 3½-fathoms rocky shoal.

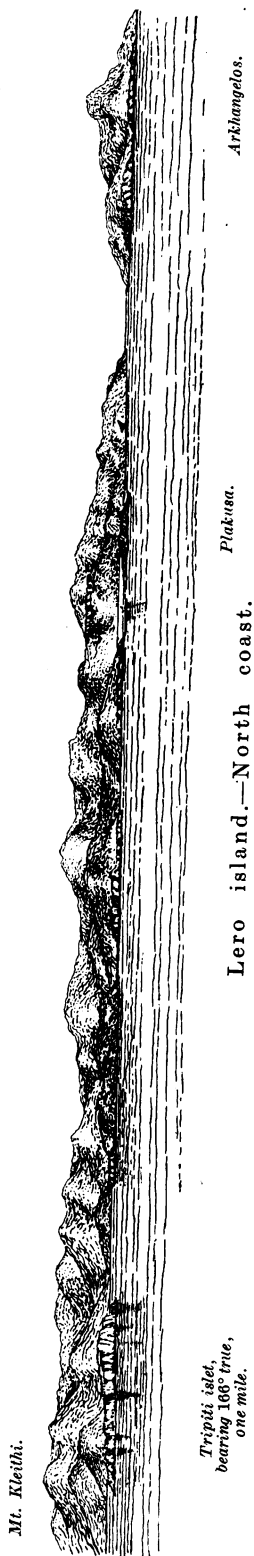
**Parthani bay** (*Lat. 37° 11' N., Long. 26° 49' E.*), at the north-western end of Lero, is three-quarters of a mile deep, narrow at its head, with anchoring depths all over it; it terminates in a basin in  
 35 the south-east corner, called Agia Matrona, having 3 fathoms water. Near the southern part of the head of the bay are some ancient ruins. The island of Arkangelos, 428 feet high, which is irregularly formed, but more than 1½ miles in length, lies parallel to the north-western end of Lero, and completely covers Parthani bay. The passage be-  
 40 tween, about 2 cables wide, is called Pharios channel, the name of some little islets at the south-western end of Arkangelos, and carries from 10 to about 30 fathoms water. If induced to take this channel, keep midway and pass out northward between Plakusa and Tripiti

*General charts 1546, 2836a.*





Nikaria to Kalimno, from the westward.



*Chart 1666, Lero and Kalimno. Var. 2° 30' W.*

islets, so as to avoid the 2-fathoms shoal lying about  $1\frac{1}{2}$  cables off the northern point of Lero. See view of north coast of Lero island, opposite.

**PORT LAKI.**—The approach to Port Laki presents no difficulties 5  
to the navigator, and is readily distinguished by the three precipitous  
summits on the south side of the inlet and the contrasting rounded  
appearance of Mount Konasmata on the northern side, although the  
actual entrance may not be seen until nearly opposite the headlands.

**Skrophes ledge.**—The only off-lying danger in the approach is 10  
the Skrophes ledge, consisting of large boulders from 5 to 20 feet in  
height, which extends for nearly half a mile off-shore, the outer  
extreme being distant three-quarters of a mile north-westward from  
Cape Laki.

The entrance to Port Laki is  $2\frac{1}{2}$  cables wide between Cape Angistro, 15  
a precipitous cliff, 150 feet high, on the south, and the low rocky point  
which extends in a north-easterly direction from Cape Laki on the  
north side.

The port is rather more than  $1\frac{1}{2}$  miles long in a north-easterly  
direction, by about half a mile broad, and is enclosed between two 20  
ranges of hills; Mount Triad, 845 feet high, a rugged, grey, cliffy  
eminence, being the highest summit on the south, and Mount Konas-  
mata, 735 feet high, on the north side. The coast on either side is  
generally steep-to, and is composed of rock; there are shallow bays  
of sand and shingle between the points, and here the water shoals 25  
more gradually, while occasional patches of rock lie close off-shore.

At a distance of about a mile from the entrance the inlet widens  
somewhat and forms two shallow bays to the northward, while to the  
eastward and southward are two fairly deep coves, the eastern one  
having depths of  $1\frac{1}{2}$  fathoms, and the southern one, known as Lepetha 30  
cove, having depths of 7 and 8 fathoms over a mud bottom.

Wherever there is sufficient space, houses have been built in the  
valley, and cultivation is in progress. The villages of Temania and  
Lepetha, consisting of about 250 houses scattered over the valleys and  
low hills, are at the north-eastern end of the port; the larger houses 35  
are owned by wealthy Greeks in Egypt, who make use of Lero island  
as a health resort.

**Landmarks.**—The most prominent objects are the red dome of  
Agios Theologos church (*Lat. 37° 08' N., Long. 26° 52' E.*), in  
Temania; a white windmill, 175 feet high, and a large white house 40  
on the Windmill hill, close to Kome point; also a small white chapel,  
20 feet in height, on the summit of a conical hill, 272 feet high, over-  
looking Lepetha cove; the chapel is built on the site of some old  
Roman and probably Venetian ruins.

*General chart 2836a.*



*Chart 1666, Lero and Kalimno. Var. 2° 30' W.*

**Rocks.**—Favati rock, with a least depth of  $4\frac{1}{2}$  fathoms, is of small extent, and is situated  $228^\circ$  true, distant  $3\frac{3}{4}$  cables from the windmill. Queroni rock, with a least depth of  $5\frac{1}{2}$  fathoms, is a rocky ledge with  
5 from 6 to 8 fathoms over it, extending about half a cable northward and southward of the shoalest part, which lies  $252^\circ$  true, distant  $2\frac{1}{4}$  cables from Apeliotes point.

**Anchorage.**—There is good anchorage in from 7 to 25 fathoms over a mud bottom, but care must be taken to avoid dropping the  
10 anchor on rock. The holding ground is good, but it is advisable to give a vessel plenty of cable as, should a westerly or south-westerly gale come on, a swell sets into the port, and very violent gusts of wind sweep down from Mounts Triad and Konasmata and over Lepetha village, often varying in direction as much as 6 or 7 points in a few  
15 minutes, though the wind outside remains perfectly steady.

Boat sailing in strong westerly or south-westerly winds is dangerous.

**Directions.**—If approaching from the northward steer to pass about one mile to the westward of Skrophes ledge until the entrance to Port Laki opens out between Capes Laki and Angistro, thence steer a  
20 mid-channel course to the anchorage. If approaching from the southward, pass Cape Kalavati (*Lat.  $37^\circ 06' N.$ , Long.  $26^\circ 52' E.$* ) as convenient, and proceed as above.

**Landing.**—There are two small piers, with depths of 3 to 4 feet at their outer ends, at Temania, and a small stone pier inside a stone  
25 breakwater at the head of Lepetha cove; the basin formed by this breakwater is, however, very shallow, there being only from one to 2 feet of water in it.

For supplies, *see* under Lero, page 358.

**Thremona bay**, on the south-western side of Lero, cuts more  
30 than half-way into the island; Xero Kambo is at the southern end. For these and the rugged and irregular coast with the rocks and shoal patches bordering it elsewhere with one or two islets off it, the chart must be the guide.

*Chart 1574, The islands of Patmos, Arki, and Lipso.*

35 **LIPSO CHANNEL.**—The space between Arkhangelos and Lipso islands, called Lipso channel, is  $3\frac{3}{4}$  miles wide, and is interspersed with several islets, rocks, and shoals.

**Saraki**, the south-western islet, is about  $1\frac{1}{4}$  cables in length, and lies  $3\frac{1}{2}$  miles west-north-westward from the north-west point of Arkhangelos, with an isolated sunken rock lying nearly  $1\frac{1}{2}$  cables off its  
40 north-eastern side, with deep water close outside, and 12 fathoms between it and the islet.

**Koreli rock.**—At 4 cables south-south-westward from Saraki is Koreli rock above water, with sunken rocks close to it, and  $3\frac{1}{2}$  cables

*General charts 1546, 2836a.*

*Chart 1574, The islands of Patmos, Arki, and Lipso.* Var.  $2^{\circ} 30'$  W. eastward of Koreli rock is a  $4\frac{1}{2}$ -fathoms rocky shoal; there are from 20 to 30 fathoms near these dangers, and they should be given a wide berth.

The western extreme of the Khalavra isles open eastward of Phrango islet, bearing  $16^{\circ}$  true, leads eastward of them.

**Phrango islet**, north-eastward of Saraki, is  $4\frac{1}{2}$  cables in length, and 252 feet high, with rocks above and below water, lying nearly 2 cables off its southern end; the passage between these rocks and the rock off the north-eastern side of Saraki, is nearly  $1\frac{1}{3}$  miles wide, with from 45 to 50 fathoms water in mid-channel.

**Miseo reef**.—At 4 cables north-westward of the northern end of Phrango is the northern end of Miseo reef, about  $1\frac{1}{2}$  cables in extent, and partly above water; midway between the reef and islet the water is deep.

**The Khalavra isles** (Lat.  $37^{\circ} 16'$  N., Long.  $26^{\circ} 46'$  E.) are a cluster of six small islets, and two or three large rocks with sunken dangers, extending over a distance of  $1\frac{1}{2}$  miles in a west-north-west and east-south-east direction. There are boat passages between the islets, and with the exception of the south-western side of the largest and western isle shoal water extends off all round about  $1\frac{1}{2}$  cables.

A patch with 7 fathoms water on it lies 3 cables north-north-westward from the north-west extreme of the western isle.

Between these islets on the north-east and Phrango islet and Miseo reef on the south-west, the passage is clear and deep; between the islets and the rocks skirting the shore of Lipso, the passage is 4 cables wide, and in mid-channel 21 fathoms deep.

**The Kalapodi** are two islets extending over a space of 4 cables east and west, and bordered by a narrow bank, with deep water near them; they lie about  $1\frac{3}{4}$  miles south-eastward of the south-east point of Lipso, in the fairway of the eastern part of Lipso channel, and may be passed on either side.

**LIPSO ISLAND**.—Lipso island, from which the channel derives its name, is  $4\frac{1}{2}$  miles in length north-west and south-east, and from less than a third of a mile to about 2 miles in breadth, its north-western part being 903 feet high. Its coast is indented with bays and numerous little coves, and skirted by rocks and uneven bottom, more especially the south-eastern part.

See view Nikaria to Kalimno at page 359.

**Port Sokoro**, on the south-western side, is a snug little harbour, with from 16 to 5 fathoms water, mud bottom, and partly covered from the south-westward by the Khalavra isles.

Port Muskat, at the north-western end of the island, is another inlet, but of no utility.

*General chart 2836a.*

*Chart 1574, The islands of Patmos, Arki, and Lipso. Var. 2° 30' W.*

**South Aspra isles** are two little islets on a 3-fathoms bank, extending eastward two-thirds of a mile from the south-eastern part of Lipso. A third islet, with shoal water around, lies 2 cables southward of the outer and larger of the two, with 8 fathoms water in the narrow channel between.

At 3 cables south-eastward from the southern islet is a rocky patch with  $1\frac{1}{2}$  fathoms water on it.

**Directions.**—In steering between South Aspra isles and Kalapodi, from the westward, keep the northern end of Phrango islet open southward of the rocks at the southern end of the Khalavra isles, 264° true, until the north islet of North Aspra isles begins to open eastward of the south islet of the same group, 350° true.

**North Aspra isles** (*Lat. 37° 19' N., Long. 26° 50' E.*) are another group of islets and rocks, covering a distance of about a mile north and south, and separated from the eastern end of Lipso by a space of half a mile from 8 to 10 fathoms deep, but the passage is contracted to about  $1\frac{1}{2}$  cables wide by rocky shoal ground extending from either side, and which surrounds the islets.

**Danger.**—At 7 cables 54° true from the north-east extreme of the northern of North Aspra isles is a rocky shoal with  $2\frac{3}{4}$  fathoms water on it. The western of South Aspra isles, 216° true, open eastward of the southern of North Aspra isles, will lead eastward of the shoal; the southern end of Grilussa island, in line with or only a little open southward of Kupaki, 280° true, will lead north of the shoal.

**Rephulia islets** are a group of small islets and rocks, covering a space of  $1\frac{1}{10}$  miles north-east and south-west, with rocks and shallow water extending nearly 3 cables north-eastward from the northern islet; the south-western, the largest islet, is 217 feet high. These islets lie off the northern end of Lipso, the passage between being about a third of a mile wide, and midway from 20 to 35 fathoms deep.

**ARKI ISLAND** is  $3\frac{1}{2}$  miles in length, north-north-west and south-south-east, with an extreme breadth of about a mile, and an irregular coastline. Off its south-western side is the island of Grilussa, the largest of a group of four islets fronting three little inlets; at the south-eastern end of Arki island is another group of five or six islets, but neither Arki nor the islets are of any importance. The passage between this group and the shallow water extending north-eastward from the Rephulia islets is over three-quarters of a mile wide, and in mid-channel clear and deep. Vessels in the vicinity of the Lipso or Arki groups should avoid the salient points, and the chart should be the guide

**PATMOS**, called by the Italian mariners of the Levant "San Giovanni di Patino," occupies a space of nearly 7 miles

*General chart 2836a.*

*Chart 1574, The islands of Patmos, Arki, and Lipso. Var. 2° 40' W.*  
 north and south, and at the northern end, where it turns south-east-  
 ward, it is about  $4\frac{1}{2}$  miles south-east and north-west, but the island is  
 very irregular in shape, and the coast so indented with bays and inlets,  
 that in places it narrows to between one and 2 cables. It is of no  
 great elevation, the highest hill, Agios Elias (*Lat. 37° 18' N.,*  
*Long. 26° 34' E.*), being only 874 feet above the sea, and is throughout  
 a mass of barren black rock, with generally a steep cliffy coast. The  
 population, amounting to about 2,500, is exclusively Greek, who gain  
 a subsistence by transporting merchandise from place to place in their  
 boats, and by periodical emigration to the continent, or to more fertile  
 islands, where labour is required. *See views on chart 1574.*

*Plan of Port Skala on chart 1574.*

**Port Skala**, on the eastern side of the island, is an inlet 7 cables  
 deep and 2 cables wide, carrying from 20 to 3 fathoms water, mud  
 bottom. It is exposed to a long fetch from the south-east, and the  
 winds blow over the hills in violent gusts, often shifting so as to render  
 the port inconvenient for large vessels. About half-way in, on the  
 south-western side, is the village of Skala, containing about 50 houses,  
 and on a hill overlooking the port is the town of Patino, in the middle  
 of which, and in the highest part of it, is the monastery of St. John  
 the Divine, presenting the appearance of a fortress flanked with towers,  
 and conspicuous from seaward; the monastery was built in the 12th  
 century. About half-way between the port and town is a natural  
 grotto, over which is a small church; and near this is the monastery of  
 the Agios Ioannis, supposed to stand on the site of St. John's residence  
 on this island. The town is reached by a steep and rugged ascent,  
 and is about half an hour's walk from Skala. *See views D and E on*  
*chart 1574.*

**Islets.**—In the bend of the coast northward of the port are three  
 little bays; Panagia islet lies at the entrance of the middle bay known  
 as Agria Livadia, and two other islets, Georgio and Kudro, lie off the  
 northern shore of this large indentation, which is bordered by rocky,  
 uneven ground.

*Chart 1574, The islands of Patmos, Arki, and Lipso.*

**Khelia islet**, nearly half a mile in length, 369 feet high, and  
 surrounded by rocks, which extend  $1\frac{1}{2}$  cables from the north and south  
 ends, lies  $2\frac{1}{2}$  miles east-south-east of Port Skala.

**The Sklavaki isles** (*Lat. 37° 19' N., Long. 26° 37' E.*), a group  
 of little islets and rocks covering a space of about 7 cables in a north-  
 east and south-west direction, lie between Khelia islet and the eastern  
 promontory of Patmos terminating in Cape Yeranós; the isles are  
 steep-to, except the north-eastern, from which a reef extends a short  
 distance eastward.

*General charts 1574, 2836a.*

*Chart 1574, The islands of Patmos, Arki, and Lipso. Var. 2° 40' W.*

- DANGERS.—Khelia rock**, with 3 feet water on it and steep-to, lies 179° true 5½ cables from Khelia islet, with Mount Sklaves (760 feet high) in line with the western extreme of Sklavaki islet, 5 349° true. See views A and C on chart 1574.

- Cape Yeranos, the eastern extreme of Patmos, bearing 3° true, well open eastward of Khelia islet, leads eastward of the rock; the north side of the hummock on Cape Yenupa, touching the south side of Trago island, bearing 268° true, leads southward of the rock. See view 10 B on chart 1574.

*Plan of Ports Stavros and Griko on chart 1574.*

- Trago reef** lies nearly 3 cables eastward from Trago island, is partly above water, nearly a quarter of a mile in extent north and south, and steep-to, with deep water between it and the islet. A 15 detached patch of 3½ fathoms lies half a cable eastward of its northern part. From its southern end the north side of the hummock on Cape Yenupa and the southern end of Trago island are nearly in line. The passage between the reef and Khelia rock is more than a mile wide, and, with the exception of the 6-fathoms rocky patch lying two-thirds 20 of a mile west-south-westward from the southern end of Khelia islet, is deep and clear.

- Ports Griko and Stavros.**—Southward of Cape Trago the coast forms a bay, and in the centre is the island of Trago, sheltering a space within it about 2 cables wide, called Port Griko. The little 25 port is completely sheltered, and from 3 to 8 fathoms deep; the principal entrance is southward of Trago island, the northern entrance between the shoals on either side being only a little more than half a cable wide.

- Port Stavros, at the south-western end of Patmos, is an indentation 30 of the coast on the north-western side of Mount Prasson (789 feet high), and separated from Port Griko on the east by an isthmus which is little more than 1½ cables across, uniting the mount to the main part of Patmos on the north. The shore of Port Stavros is bordered by shallow water and rocks, but neither of these ports are in any way 35 utilised.

*Chart 1574, The islands of Patmos, Arki, and Lipso.*

- The western coast of Patmos is steep and irregular, with three or four bays, and here and there detached rocks, but as there is nothing to induce a vessel to come here, it should not be closely approached; 40 the northern coast is ragged with projecting points, and should also be avoided.

**Anedro islet and Petro Karavi.**—Anedro islet (Lat. 37° 25' N., Long. 26° 31' E.) lies 2½ miles north-westward of

*General chart 2836a.*

*Chart 1574, The islands of Patmos, Arki, and Lipsa. Var. 2° 40' W.*

Cape Zoluphi, the north-western extreme of Patmos; it is  $5\frac{1}{2}$  cables in length, east and west, steep and cliffy on the southern side, with one or two rocks at its base, and with from 40 to 50 fathoms water, at about a cable off; close to the north side are depths of from 2 to 11 fathoms, and from 30 to 50 fathoms at  $1\frac{1}{2}$  cables off.

The Petro Karavi are a cluster of rocks, extending a quarter of a mile north and south, with deep water round them, and lying 2 miles westward of Anedro island.

**Furni (Phurni) rock**, a small patch said to have only 5 fathoms water on it, lies between Anedro and Makra nisi of the Furni islands. It bears  $0^\circ$  true, distant  $3\frac{2}{3}$  miles from the north-east extreme of the former, and is  $1\frac{9}{10}$  miles southward from the south point of Makra nisi; its vicinity should be avoided. To pass westward of Furni rock, Furni (Phurni) Boghaz, the passage between Themina and Diapori islands must be kept open. (See page 375 and view on chart 1537.)

*Chart 1546, Samos strait to Mandelyah gulf.*

**SANDAMA PENINSULA**, on the mainland of Asia Minor, is 600 feet high, covers a space 2 miles north and south, by upwards of  $1\frac{1}{2}$  miles east and west, and is now joined to the mainland by a low isthmus a little more than a cable across. Its shores are irregular and rocky, and off its northern point are four or five detached rocks or islets. Sandama bay, on the southern side of the peninsula, nearly 2 miles deep, is open to the west, with rocky shores on either side, and a little islet with shoal water round it on the south, but having deep water all over the central part. On the southern side of the entrance to Sandama bay is Myndus rock, with  $4\frac{1}{2}$  fathoms water on it, which together with Pondikusa and Keramidi islets are described on page 352.

**Pasha bay**.—On the northern side of Sandama peninsula is an inlet called Pasha bay, two-thirds of a mile deep, narrow with a rocky islet on the western side of entrance, and rocky ground bordering the eastern shore, with deep water between. The bottom within is stiff sand, and grass, and at half a mile within the islet at the entrance the depths are moderate; the inlet is exposed to northerly winds.

**Wreck rock** (*Lat.  $37^\circ 09'$  N., Long.  $27^\circ 18'$  E.*).—At nearly two-thirds of a mile north-westward from the northern point of Sandama peninsula is Wreck rock, the northern of the detached rocks or islets before mentioned; it is 21 feet high, with deep water on all sides except the east, where there is a shoal patch with  $2\frac{1}{2}$  fathoms on it, about a cable off. The islet derives its name from the circumstance of a large vessel sunk in 9 fathoms water having been found there years ago with her bowsprit touching the base of the rock.

*General chart 2836a.*

*Chart 1546, Samos strait to Mandelyah gulf. Var. 2° 20' W.*

**Shoal.**—At 4 cables east-south-eastward of the rock, and about the same distance northward from the northern extreme of the peninsula, is a shoal patch with 3 fathoms water on it.

- 5 **MANDELYAH GULF.**—From Sandama peninsula the southern shore of Mandelyah gulf trends generally eastward 15 miles to the head of Guvergenik bay; it is rugged and irregular, indented by deep bays, with rocky shores, projecting points, and off-lying islets, and backed by the high land of the promontory of Budrúm, which in  
10 Oglu Dagħ reaches the height of 2,280 feet above the sea.

- Agios Apostola island** (Apostol adasi),  $4\frac{3}{4}$  miles to the east-north-eastward of Wreck rock, and 4 cables off-shore, is a mile in length north-west and south-east, and 386 feet high, with some ruins on it; its southern end is bordered by shoal water. An islet, also with  
15 shoal water around it, lies close to its north-western end. Between the shoal at the southern end of Agios Apostola and the point of the coast south-west of it which is steep and bold the passage is a third of a mile wide, and 25 fathoms deep in mid-channel. High rock, steep, with 6 and 16 fathoms close to it, lies in the eastern entrance of the passage,  
20 equidistant from the island and shore.

- Ghiul bay or Chesil liman.**—The entrance to this bay is  $1\frac{1}{2}$  miles south-eastward of Agios Apostola island; the bay extends southward upwards of a mile to the valley at its head, where there are some ruins, and a little back from the shore is a lagoon which com-  
25 municates with the sea. An island, and a small islet a little south-west of it, form with the steep peninsula bounding the western side of the bay, a narrow creek carrying from 14 to 16 fathoms water. There are anchoring depths all over Ghiul bay, but south-westward of the island and on the same side is a bight where there is anchorage in  
30 from 10 to 15 fathoms, mud, sheltered from all winds except from about N.E. by E. to E. by S. The southern point of the bight is bordered by shoal water; a stream runs into the head of Ghiul bay.

- Durvanda bay** (Lat.  $37^{\circ} 06' N.$ , Long.  $27^{\circ} 30' E.$ ).—At about  
35  $4\frac{1}{2}$  miles south-eastward of Ghiul bay is the head of a deep bight called Durvanda or Trupada bay, with anchoring depths of from 18 to 5 fathoms; from here, the distance across the promontory to Budrúm on the south is a little over 3 miles as the crow flies. The salient points south-eastward of Ghiul bay are bordered by shoal water.

- 40 On the eastern side of Durvanda bay, at  $1\frac{1}{2}$  miles from its head, are two little islets surrounded and connected to the shore by shoal ground. The elevated land over and south-eastward of the head of the bay is 1,776 feet high.

*General chart 2836a.*

*Chart 1546, Samos strait to Mandelyah gulf. Var. 2° 20' W.*

**Shoal.**—Denir liman is the name given to a small indentation about half way between Ghiul and Durvanda bays, and off its entrance, at one-third of a mile from the shore on each side, is a shoal about  $1\frac{1}{2}$  cables in extent, with 2 fathoms on it, and deep water around and inside it.

**Tarandakia islets.**—The two Tarandakia islets lie in the centre of the deep bight before mentioned, and are separated from each other by a passage  $1\frac{1}{2}$  cables wide, and from 5 to 7 fathoms deep. Together they extend one mile north-east and south-west; the southern islet is the higher, rising 140 feet above the sea, and is distant about  $1\frac{1}{2}$  miles from the shore both westward and south-eastward, and  $2\frac{1}{2}$  miles northward from the head of Durvanda bay.

**Tarandos** (ancient *Karyanda*).—This island is  $2\frac{1}{2}$  miles in length east-north-east and west-south-west, irregular in shape, and 498 feet high. At its eastern end there are some ancient ruins and a village. Shoal water extends a quarter of a mile southward of its western end, which can be avoided, as the passage between it and the Tarandakia is nearly three-quarters of a mile wide, with deep water. See view below.

Tarandos forms, with the coast eastward of it, a narrow channel about  $1\frac{1}{2}$  cables wide, carrying 10 fathoms water. A small bank extends from the island at the southern entrance; and another from the mainland coast at the northern entrance.



Tarandos. 123° true, 11 miles. Tarandakia.

Mandelyah gulf: south shore.

**Guvergenik bay** is  $1\frac{1}{2}$  miles deep, with an average breadth of about half a mile, and having from 20 to 5 fathoms water. South-westward of the entrance are two little islets or rocks, named *Karandakia*, close to the coast, and the shore on the southern side of entrance is bordered by a narrow bank. On the south point, called *Karahdereh*, are ruins, and at the head of the bay are others, with the village of *Kiuvergini*; this is the supposed ancient port of *Karyanda*. The bay is well sheltered, and fronted by Tarandos and Tarandakia islands.

**Kavo Asar** (*Lat. 37° 12' N., Long. 27° 33' E.*).—At  $1\frac{1}{2}$  miles northward of Tarandos island is Kavo Asar, the tip of a tongue of land projecting a mile north-westward, and off it is *Kargo nisi*, about  $1\frac{1}{2}$  cables in length; there are 7 fathoms water between the islet and the termination of the tongue, but on either side the

*General chart 2836a.*



*Chart 1546, Samos strait to Mandelyah gulf. Var. 2° 20' W.*

water is shoal, which narrows the passage, and it is only fit for small vessels. At  $2\frac{3}{4}$  miles beyond Kargo nisi is the entrance to Bargylia creek, and between is a small islet and one or two shoal patches bordering the coast.

**Bargylia creek** runs 7 cables in a south-easterly direction, with from 9 to 3 fathoms water as far as a sandy spit, within which is a shallow lagoon with broken ground continuing one mile farther, to the causeway of ancient Bargylia, when it turns and runs for a mile south-westward; the River Aliki discharges into the south-eastern part of this arm. On the site of Bargylia may be traced vestiges of ancient walls, remains of an aqueduct, theatre, temples, tombs, a fortress of the middle ages, and other ruins.

**IASSUS BAY**, at the eastern part of the gulf, extends nearly 5 miles north-eastward, with an average breadth of  $2\frac{1}{2}$  miles; its shores are indented by several coves, and surrounded by hills which on the south-east reach an elevation of 1,065 feet, and there are anchoring depths all over it. *See view below and on next page.*

At  $1\frac{1}{2}$  miles north-eastward of Bargylia creek is a little islet or rock surrounded by shoal ground, lying close to the south-western point of Chulukioi or Kiulukioi cove; on the north-eastern point of the cove is the village of the same name, and thence a road leads into the interior. Vessels anchor off the village (*Lat. 37° 14' N., Long. 27° 38' E.*).

At  $1\frac{1}{2}$  miles north-eastward of Chulukioi the shore is broken and bordered by shallow water, which extends off a quarter of a mile; the Sari Chai runs into the sea and also feeds an extensive lagoon.



**Sheiro bay.**—On the north-western side of Iassus bay a tongue of land projects three-quarters of a mile south-eastward, westward of which is the little bay of Sheiro, with from 10 to 3 fathoms water; a sunken rock lies a little within the entrance on the eastern side. Makro nisi, a narrow island about 9 cables in length and parallel to the north-east side of the tongue of land, forms with it a narrow channel having from 7 to 11 fathoms water; shoal water extends nearly a cable from the east side of Makro nisi at the south-east and

*General chart 2836a.*

*Chart 1546, Samos strait to Mandelyah gulf. Var. 2° 20' W.*

north-west ends, and from the north-west point a shoal spit extends one cable, with a sunken rock, on which the depth is 7 feet 100 yards from the shore. Farther in are two other islets, named Chiro nisi and Aspro nisi, each with shoal water around it, the outer edge of which is steep-to. Elsewhere, all the upper part of Iassus bay has from 13 to 6 fathoms.

*Plan of Port Isene on 1878.*

**Iassus** (Lat. 37° 17' N., Long. 27° 37' E.), about half a mile in length north and south, and formerly an island, but now united to the low shore, has on its western side the little port of Isene, with from 3 to 4 fathoms over a space of 2 cables and shoaler water within. The narrow entrance is 5 fathoms deep, between the remains of a mole on the west and an old tower on the east. On the summit of Iassus is a Venetian castle, and in the vicinity are the remains of a theatre, temple, aqueduct, and tombs, traces of the ancient walls, and other ruins. *See view on plan.*

Between Iassus and a projecting point, 5½ cables distant on the east, is Isene bay, about three-quarters of a mile deep, with a sandy shore at its head, bordered by shallow water, and in the outer part 4 to 6 fathoms deep, mud bottom; a stream runs into bay. To the eastward of Isene bay is another bay named Kasalkioi, with the village of the same name and a Custom house.



Alaguni and Iassus bays.

*Chart 1546, Samos strait to Mandelyah gulf.*

**Alaguni bay.**—To the north-westward of Iassus bay is Alaguni bay, 2½ miles deep, with an irregular shore and shoal water extending from the salient points. Two shoal patches lie in the central part of the bay, one with 7 fathoms water on it, the other with 5 fathoms. The bay is formed by the termination of ridges on either side diverging from within; the ridge a mile from Cape Alanguli or Tike burnu, the north-western point, is 904 feet high, and that about three-quarters of a mile within Cape Nijekul, the south-eastern point, 643 feet high. *See view above.*

**Kasikli bay**, next north-westward of Alaguni, is 4 miles deep and a mile wide at 1½ miles from its head. Here there is anchorage 8 to 12 fathoms, mud bottom. The last mile of the bay runs in north, with a width of 2 to 3 cables, forming, two-thirds of a mile from the

*General charts 1546, 2836a.*

*Chart 1546, Samos strait to Mandelyah gulf. Var. 2° 20' W.*

head, a small sheltered anchorage in 4 to 6 fathoms; the head itself taking the shape of a little circular basin 3 to 6 feet deep, called Kasikli harbour, having a small islet in it. See view below.



Kasikli bay, from Isabel rock.

5 **Mount Grius.**—The bold elevated land on the north-western side of Kasikli bay, at a little more than one mile within, is 1,377 feet high; to the north-eastward Mount Grius reaches 3,573 feet; beyond this again, at from 10 to 15 miles from the head of the bays, the lofty range of the ancient Latmus is 4,500 feet above the level of the sea.

10 **Kapota islet** (*Lat. 37° 17' N., Long. 27° 24' E.*) is about 4 cables in length, 184 feet high, and lies  $2\frac{4}{10}$  miles west-south-westward from Cape Spratt, the north-west entrance point of Kasikli bay. With the exception of a narrow bank on the northern side, the islet is clear of danger.

15 **Kapota shoal**, with 4 fathoms water over it, lies three-quarters of a mile eastward from the islet, with a depth of 34 fathoms between.

Cape Nijekul, on the eastern side of the entrance to Alaguni bay, 114° true, and well open of Cape Alanguli, the western entrance point, leads southward of the shoal and Kapota islet. The point a mile north-  
20 ward of Kavo Grœas, on the eastern side of the entrance to Basilicus bay, shut in with that cape, the latter bearing 344° true, will lead eastward of the shoal. To pass westward of the shoal keep Kapota islet close aboard.

**Cape Spratt** is the south-western termination of the bold elevated land rising over the western side of Kasikli bay, and from it  
25 shoal water extends off a distance of  $1\frac{1}{2}$  cables. The shore from the cape, thence round the eastern side of Basilicus bay, is irregular and bordered by shoal water.

**Isabel rock**, with 3 feet water on it and 7 and 8 fathoms around  
30 it, lies 294° true, distant  $1\frac{4}{10}$  miles from Cape Spratt, and is a little more than half a mile south-south-westward from Kavo Grœas.

Mount Salta, bearing eastward of 108° true, and well open southward of Cape Spratt, will lead south of the rock; Xiphorima point, three-quarters of a mile eastward of the cape, kept open southward of  
35 it, bearing 94° true, will also lead southward of the rock.

**Ikikat rocks** extend over a space of one-third of a mile, with from one to 3 fathoms water on them, and from 4 to 12 fathoms close

*General chart 2336a.*

*Chart 1546, Samos strait to Mandelyah gulf. Var. 2° 20' W.*

around; their outer edge is 8 cables westward of Kavo Greeas, with from 5 to 15 fathoms between them and the shore, and 20 fathoms outside them. At about three-quarters of a mile farther northward, and two-thirds of a mile from the shore, is another patch with  $5\frac{1}{2}$  fathoms. The above dangers are on the eastern side of the fairway into Basilicus bay. 5

**BASILICUS BAY** (*Lat. 37° 22' N., Long. 27° 24' E.*).—The outline of Kyriaki point, the western entrance point of this bay, is irregular, being formed into several little points and bordered by shoal ground, which extends 4 cables eastward, with a large rock or islet on it, known as Agia Kyriaki. Between this shore and that northward of Kavo Greeas on the east the distance is about  $2\frac{1}{3}$  miles; the bay then extends north-eastward about 5 miles to low land at its head. The shore all round the bay is bordered by shoal water, with rocks on the western side, and there are shallow patches of from 3 to 5 fathoms in the central part towards the head, where the bottom is generally uneven. 10 15

**Panagia islet.**—Basilicus bay is fronted by Panagia islet, about two-thirds of a mile southward of Kyriaki point, and  $5\frac{1}{2}$  cables in length, surrounded by a bank with a shoal spit extending a quarter of a mile eastward, and shallow rocky ground extending a quarter of a mile northward. 20

The islet is on the south-western end of a bank under 10 fathoms, which extends from the east side of the entrance to the bay.

**Bank.**—A large bank, with 7 fathoms, sand, on it, lies half a mile south-westward of Panagia islet, with deeper water between. The outer part of the bank bears 237° true, distant  $1\frac{1}{2}$  miles from the south extremity of Panagia islet. 25

**Shoal.**—At three-quarters of a mile north-eastward from the north-eastern point of Panagia islet is a shoal 3 cables in extent, with  $2\frac{1}{2}$  fathoms water on it and 5 fathoms on the bank between. 30

Within the entrance, on the western side of Basilicus bay, is the bay of Kruvraike, upwards of a mile deep, with from 6 to 9 fathoms water.

**Anchorage.**—In the upper part of Basilicus bay, on the eastern shore, is the village of Akbuki, and off it is anchorage in 6 to 10 fathoms, mud, southward and south-westward of the shallow patches previously alluded to. 35

**Directions.**—A lane of deep water leads into the bay between Panagia islet and Kyriaki point, which may be used by small vessels. The summit of Agios Apostola island, in line with the west side of Kapota islet, bearing 178° true, leads into Basilicus bay eastward of Panagia islet and between the dangers on either side; when well within the entrance, a vessel may anchor in Kruvraike bay, or steer along 40

*General chart 2836a.*

*Chart 1546, Samos strait to Mandelyah gulf. Var. 2° 20' W.*

the eastern side for the anchorage off the village of Akbuki, avoiding the shore bank, and the shoals in the northern part of the bay, for which the chart must be the guide.

- 5 **Cape Monodendri** (ancient *Posidium prom.*) (*Lat. 37° 21' N., Long. 27° 13' E.*).—From the entrance of Basilicus bay to Cape Monodendri the distance is about  $7\frac{1}{2}$  miles in a westerly direction; the irregular coast between forms Skrophes bay and a few little coves, and is bordered by shoal water, which 3 miles east-south-eastward of the  
10 cape extends half a mile from the shore.

**The Posidium** is a rocky shoal, 3 cables in length north and south, with 3 fathoms least water on it; its southern end is 8 cables from the shore and bears 152° true, distant  $1\frac{1}{4}$  miles from Cape Monodendri.

- 15 Approaching Cape Monodendri from the eastward, when near the Posidium shoal, Kyriaki point should be kept well open of Karako point on the western side of Skrophes bay, 81° true, until Cape Monodendri bears 8° true, when this cape may be passed at a distance of 8 cables.

- 20 **PHARMAKO**.—This island (the ancient *Pharmakusa*) is 2 miles in length north and south, varies in breadth from  $2\frac{1}{2}$  cables to one mile, with bays on its eastern side, and its southern part is 300 feet high; the water all round it is deep except at one or two places close in to the shore. There are some ancient ruins on the southern part of  
25 the island. It lies  $5\frac{1}{4}$  miles south-westward of Cape Monodendri, with about 38 fathoms water midway between, over a nearly level bottom.

- Kovelo bay** (ancient *Panormus portus*),  $3\frac{1}{2}$  miles north-north-eastward of Cape Monodendri, is two-thirds of a mile deep, and open  
30 to the westward; on its southern side are two or three semicircular little coves, and a few years ago at the head of the bay were some fragments of columns. A road leads from the bay to Ieronda, and the ruins of Didymi on a hill south-eastward, and thence to Skrophes bay.

- 35 The coast from Cape Monodendri to Dinakli,  $6\frac{1}{4}$  miles northward, is irregular and bordered by a narrow bank with rocks; thence, it takes the form of an irregular, broken up, shallow bight to the mouth of Buyuk Mendere and Meander point, which lies 7 miles northward from Cape Monodendri.

- 40 *Chart 1574, The islands of Patmos, Arki, and Lipso.*

**GAIDARO** (ancient *Hyetussa*) (*Lat. 37° 28' N., Long. 27° 00' E.*) is an island of irregular shape, a little more than 4 miles in length east-south-east and west-north-west, and towards the western end,

*General charts 1546, 2836a.*

*Chart 1574, The islands of Patmos, Arki, and Lipso. Var. 2° 20' W.*  
 720 feet high; the coast line is broken up into several bays or inlets. On the northern side of the island are four islets, and between Strongilo and Nero, the two central ones, is a large rock above water, from which a reef with less than 6 feet water on it extends westward 2 cables, more than half way to Strongilo; Nero islet, 208 feet high, is  $1\frac{1}{10}$  miles in length east and west, narrow, and its western end is united to Gaidaro by a reef. 5

**Rock.**—There is a rocky shoal, with less than 6 feet water on it, lying nearly 3 cables east-north-eastward from Claro, the eastern islet, which being a salient point should be given a sufficient berth to pass eastward of this shoal. At 9 cables southward of Gaidaro and lying parallel to it, is the islet of Kunelli, narrow, but 6 cables in length, with from 35 to 45 fathoms water between it and Gaidaro. 10

The bays formed by the irregular coast of Gaidaro are only convenient for small vessels in the inner corners, and with suitable winds. With the exception of the dangers named, the water round the island is deep at a short distance. 15

The passage between Gaidaro and the mainland is deep and clear, and also between the island and Arki, 10 miles west-south-westward. 20

*Chart 1546, Samos strait to Mandelyah gulf.*

**COAST.**—**Meander point** is a low sandy projection, through which the Buyuk Mendere runs into the sea; on its southern side, as before mentioned, the shore is broken and falls back to the north-eastward a considerable distance, leaving a large shallow opening which in part is used as a fishery. About 4 miles north-north-eastward of the point, and  $1\frac{1}{2}$  miles inland, is a hill, 335 feet high, the ancient Lade island; the shore northward as far as the base of the elevated range of the Samsun dagh, a distance of 10 miles from the point, is low and broken, with lagoons open to the sea, used as fisheries, and swampy land within extending some distance into the interior. The coast is all along bordered by shoal water, and in places the depth of 5 fathoms is a mile from the low shore, although half a mile off Meander point itself there is 25 fathoms water. 25 30

**Buyuk Mendere** or **Meddro Chai** (ancient *Meander*) (Lat.  $37^{\circ} 28' N.$ , Long.  $27^{\circ} 12' E.$ ), after a long and tortuous course from the eastward between mountain barriers, passes the ruins of Miletus at about 5 miles from the coast, and running south-westward, enters the sea at Meander point; the depth of water some distance within the mouth is 2 to 5 fathoms, but at the mouth itself only  $1\frac{1}{2}$  feet, with 2 fathoms outside. The Palaio Mendere or Meddro (ancient *Gæsus*) joins the Meander from the north-north-east, a little below Miletus. 35 40

*General charts 1546, 2836a.*

*Chart 1546, Samos strait to Mandelyah gulf. Var. 2° 20' W.*

**Caution.**—The bar at the mouth of the Buyuk Menderes is said to have extended considerably to the southward since the date of the last survey; caution is therefore necessary when approaching the entrance.

**Samsun dagh** (ancient Mount *Mykale*).—This elevated range of mountains extends east and west, upwards of 15 miles, and rises suddenly from the low swampy land on the south to its lofty summits, 3,459 feet to 4,130 feet above the sea, and falls again on the north, where its base forms the southern shore of the Gulf of Skala Nuova. Upon the rocky slopes towards the south-eastern termination of the mountain, are the ruins of Priene (now called Samsun), on a bold and precipitous rock; they consist of walls covering an extensive slope of the hill, out of which, as if built by art, spring perpendicularly the rocks on which the Acropolis was built. Priene is said to have been originally on the seashore. The elevated mass of the Samsun dagh terminates westward in Cape Kanapitza (ancient *Trogilium promontory*). See view of Samsun dagh at page 359, and on chart 1530.

*Chart 1530, The Strait of Samos.*

**Cape Kanapitza** (*Lat. 37° 40' N., Long. 27° 02' E.*).—At the termination of the low shore, the coast (being the base of the Samsun dagh) turns suddenly westward for about 5 miles, then north-westward one mile to Cape Kanapitza, when it trends north-north-eastward for  $1\frac{1}{2}$  miles to Agios Nikolo point, on the south side of the Strait of Samos. Between half a mile and one mile southward of Cape Kanapitza are three islets, each connected to the shore by shallow ground, two of which are enclosed in bays, and the third, named Theopori, forms the salient point of the coast, and is steep-to. For Samos strait, see page 381.

*Chart 1537, Furni islands.*

**FURNI ISLANDS.**—These islands (ancient *Korassia*) are of a peculiar formation, and broken into the most fantastic shapes; the whole group consists of twelve islands and rocks, and all except Furni uninhabited. They have no good harbour, though there are many creeks where small vessels with local knowledge may lie. Furni, the largest island, occupies a space of  $7\frac{1}{2}$  miles north and south, but is irregular and narrow, and rises at its northern end to a height of 1,591 feet. It is nearly divided in two in the middle, the parts being joined by an isthmus about  $1\frac{1}{2}$  cables across. The only productions are a small quantity of corn, rabbits, some miserable pigs, and honey. The inhabitants are few, and collected in a small village, in a bay on the western side of the south-western part of the island, and near it are remains of ancient buildings.

*General charts 1546, 2836a.*

*Chart 1537, Furni islands. Var. 2° 30' W.*

The columns of the temple of Juno at Samos were hewn from quarries on the south-western side of Furni island, where a few years ago were to be seen parts of columns of the same dimensions and species of marble as those of that celebrated edifice. 5

**Vagli cove**, in the central part of the west coast of the main island, and northward of the isthmus just mentioned, forms a secure anchorage for small vessels, but the water at the entrance is deep.

*Plan of Furni Boghaz on chart 1537.*

**Marmoron bay**.—The most secure anchorage is in Marmoron 10 or Marmarokopio bay, situated eastward of the southern point of Diapori island, where there is a mud bottom and moderate depths at about  $1\frac{1}{2}$  cables from the eastern shore.

The bay eastward of the northern part of Diapori island, where the village is situated, is insecure, being open to northerly gales and the 15 bottom rocky.

**Themina** (Lat.  $37^{\circ} 35' N.$ , Long.  $26^{\circ} 27' E.$ ), the western island, is about 3 miles in length east and west, and 1,585 feet high; between it and Diapori island is a channel not quite half a cable wide, clear, and 10 fathoms deep, called Furni (Phurni) Boghaz or Thiapori, and 20 in cases of necessity, with a fair wind or steam power, a vessel may pass through it. There is no passage between Diapori and Furni.

*Chart 1537, Furni islands.*

The western extreme of Themina is separated from the coast of Nikaria by a passage  $4\frac{3}{4}$  miles wide, which is clear and deep, and takes 25 the name of the latter island.

**Alazo-nisi**, half a mile long east and west and 324 feet high, lies  $2\frac{1}{2}$  miles south-south-eastward from Cape Trakhili or Kavo Themina, the western extreme of Themina. A spit with  $3\frac{1}{2}$  fathoms on it extends 150 yards from the west point of Alazo-nisi. 30

**Rock**.—A rock, with a depth of  $2\frac{1}{2}$  fathoms over it, lies 4 cables west-south-westward of the west point of Alazo-nisi, on the eastern edge of the 13-fathoms bank situated westward of that island.

**Agios Menas island**.—On the eastern side of Furni is the island of Agios Menas, about 2 miles in length north-east and south-west; in the little bay in Furni opposite its western end there is temporary summer anchorage. 35

**Furni (Phurni) rock**, said to have only 5 fathoms water on it, lies  $174^{\circ}$  true, distant  $1\frac{2}{10}$  miles from the south point of Makra-nisi, the most southern islet of the group; to avoid this danger keep within 40 or without this distance, and as long as Furni (Phurni) Boghaz is open a vessel is westward of the rock. (See page 365 and views on

*General charts 1537, 1867, 1574, 2836a.*



*Chart 1537, Furni islands. Var. 2° 40' W.*

chart 1537.) There are no other dangers by keeping a proper distance from the shore.

**Furni pass.**—The Furni islands are separated from the southwestern end of Samos by a deep and clear channel  $3\frac{1}{2}$  miles wide, called Furni pass, but it has been observed that sailing vessels making to the northward with contrary winds seldom pass through this channel, but prefer the Strait of Samos.

**Current.**—The current always sets through between Samos and Furni to the northward, and causes a confused disagreeable sea.

For Samos island and coast to the northward, *see* page 377.

*Chart 1867, Nikaria island.*

**NIKARIA.**—This island (ancient *Ikaria*) is about  $21\frac{1}{2}$  miles in length east-north-east and west-south-west, and from about 3 to about 5 miles in breadth. A chain of lofty mountains occupies its entire length, varying in height from 2,000 to 3,420 feet. The chief town, consisting of a number of villages under the general name of Mesaria (*Lat. 37° 36' N., Long. 26° 11' E.*), is situated in the centre of the island, and contains about 200 houses, near which, as well as in other parts, there are some remains of antiquity. The inhabitants, amounting in 1892 to 12,800, maintain themselves chiefly by the sale of charcoal and firewood, gathered from the thickly-wooded hills, to the neighbouring islanders and to the towns on the coast of Asia Minor.

**Climate.**—Nikaria has the character of being particularly healthy and conducive to longevity.

**Productions.**—Black raisins and fruits of all kinds grow luxuriantly here; the potatoes also are celebrated.

**Communication.**—Connection is maintained with Samos and Skala Nuova by caïque.

**Temporary anchorages.**—There is no port in Nikaria, but on the north coast Greek coasting vessels anchor under Gonati point or Kavo Agios Phokas, 3 miles westward of Cape Phanar; also in Kerame bay, at about the centre of the north coast, with off-shore winds and under favourable circumstances, but this part of the coast should be quitted at the least indication of a northerly wind.

In 1909 H.M.S. *Bacchante* anchored in Armenisti bay,  $5\frac{1}{2}$  cables,  $339^\circ$  true, from Yediskari island (6 feet high), in 17 fathoms. From this position the water shoaled very gradually towards the shore, the 10-fathom line being  $3\frac{1}{2}$  cables from the ship.

Temporary anchorage, with off-shore winds, may also be found in places along the southern coast of the island, such as Agios Georgios, half a mile off Cape Phanar; Angeriko or Kriphoghialia bay, 6 miles

*General charts 1537, 2836a.*

*Chart 1867, Nikaria island. Var. 2° 40' W.*

south-west of the same cape; and at Agios Nikolaos bay,  $3\frac{1}{2}$  miles eastward from Cape Papas; but there is no shelter whatever from southerly winds.

**Cape Phanar and Beacon hill.**—At about three-quarters of a mile south-westward of Cape Phanar (ancient *Dracannum prom.*), the eastern and somewhat flat extremity of the island, is a small elevation called Beacon hill, and 4 cables nearer the cape is a ruined tower about 40 feet high. Southward of Beacon hill is a curved sandy beach, off which a vessel will find shelter during a northerly or westerly gale. The shore northward of the beach is bordered by patches with 5 fathoms water on them, at a distance of about 2 cables, which should be given a fair berth in a large ship. 5 10

There are no off-lying dangers round the island, but sailing vessels should be cautious when near the high land and guard against squalls. 15

**Nikaria passage**, between the island and Themina to the south-east, is  $4\frac{3}{4}$  miles wide, clear and deep.

**Cape Papas** (*Lat. 37° 31' N., Long. 26° 00' E.*) is the name given to the south-west extremity of Nikaria island, and which falls steeply to the sea. The cape takes its name from a pope who formerly dwelt in the island. 20

**LIGHT.**—A light, elevated 213 feet above the sea, is exhibited from a lighthouse on the extreme of Cape Papas.

*Chart 2836a, Archipelago, southern portion.*

**SAMOS.**—This island, one of the principal of the Ægean sea, is nearly 25 miles in length east and west, and about  $10\frac{1}{2}$  miles in extreme breadth. The approaches to the island are clear of off-lying dangers, the shores are generally steep-to, and there are no rocks or shoals which may not be avoided by ordinary attention. 25

**Aspect.**—Samos is of a mountainous character, the two principal elevations being Mounts Kerki (*Lat. 37° 44' N., Long. 26° 39' E.*) and Ampelos; the summit of the former at the west end being 4,725 feet above the sea, and the barren rocky peaks of white stone of which it is composed reflecting the rays of the sun, give the appearance of snow. This mountain is nearly entirely surrounded by precipices and is most difficult of approach. The ascent to Mount Kerki is varied and magnificent in the highest degree, the path at times winding through overhanging forests of oak and plane trees interspersed with firs and tangled underwood; at other times, running so close to the edge of the precipices as to raise doubts regarding the possibility of reaching the summit. As the summit is neared, the scenery becomes barren and desolate in appearance; the only approach to the peak is by a narrow ridge of loose stones on the eastern side, overlooking a ravine on either 30 35 40

*General charts 1537, 2836a.*

*Chart 2836a, Archipelago, southern portion. Var. 2° 30' W.*

hand, nearly perpendicular, and where one false step would be fatal. Little or no vegetation appears on this sterile spot. The mountain forms three peaks about 250 yards apart; the western is about 6 feet  
5 higher than the others, the southern has a small chapel on it, and was formerly used as a look-out house. The view from the top is extensive and highly interesting.

Mount Ampelos of the eastern range, which rises near the middle of the island to the height of 3,730 feet, is round-topped, and easy  
10 of access; the sides are well clothed with forest trees. See view at page 359.

The general appearance of the northern side of the island is beautiful in the extreme, being broken into unconnected hills and ranges, clothed in most places with luxuriant vegetation and large trees; in  
15 other places, rising to bare sterile peaks, splintered into numerous fantastic shapes forming a strong and picturesque contrast to the dark foliage which clothes the higher ridges of the mountains behind them.

**Produce.**—The villages are numerous and scattered over the  
20 island, which contains an almost exclusively Greek population amounting in 1913 to 68,949. The produce consists of wine, oil, silk, valonia, cotton, corn, onions, and honey. Iron, copper, and lead are also to be found, and marble abounds. Pitch and tar were formerly made in  
25 great quantities in the mountains, but the forests are fast falling before the axe. Near the village of Platano, on the ridge of Mount Kerki, a kind of white clay is found which is used as a substitute for soap; red ochre is also found, and many kinds of grapes are grown.

**Communication.**—There is frequent communication by various  
30 lines of steamers, and a post-office is established.

**Trade.**—The principal imports are grain, flour, alcohol, sulphur, iron, cotton and woollen goods, wood, and hides. The principal exports are wine, tobacco, olive oil, and locust beans.

**Climate, &c.**—The air is remarkably salubrious, and many of  
35 the inhabitants live to a great age. Possessing the greatest natural advantages, and well stocked with oxen, sheep, poultry, game, fish, &c., and highly productive of every marketable commodity, this island should be the richest and best supplied in the archipelago, but it is not so; the men are a fine race, but indolent and improvident, with a  
40 natural proneness to pleasure.

**Numerous streams** in the interior contribute to the fertility of the soil. The River Mitelinous (*Lat. 37° 43' N., Long. 26° 59' E.*) runs into the sea a little eastward of Port Tigani on the south-east side of the island, and the Imbrasus about  $3\frac{1}{4}$  miles westward of that

*General chart 2836a.*

*Chart 2836a, Archipelago, southern portion. Var. 2° 30' W.*

port. Both are considerable streams in the winter, but in summer they are either dry or turned into different channels for the purpose of irrigation. Another and rather considerable stream rises at the foot of Mount Ampelos, and after winding among the hills and turning many mills in its way, falls into Maratrokampo bay. 5

**Antiquities.**—Many remains of antiquity are to be met with, but the most considerable are at Port Tigani, where the ruins of walls and the sunken mole attest the former grandeur of the city. A theatre on the side of a hill is in tolerable preservation, and numerous fragments of columns and capitals are strewn about the small plain. On the north-east bank of the Imbrasus and near the sea once stood the temple of Juno, one of the most superb and ancient temples in Greece. Its length appears to have been 576 feet with 24 columns on each face, and 12 at each end; only one now remains, without a capital, which lies shattered near its base. 15

**Government.**—Samos was under the Turkish Government, but ruled by a Phanariot Greek, with the title of Prince of Samos, and the people choose their own magistrates; they paid a tribute to the Porte, but were otherwise virtually independent. It is at present occupied by Greece. The former capital was Khora, an indifferent town or village with stony, steep, unpaved streets, about 2 miles west-north-westward of Tigani. The present capital is Vathi, to be again alluded to in connection with the port of that name. 20

*Chart 1537, Furni islands, &c.* 25

**Cape Katabasis**, or Kavo Pheneroegloes (ancient *Cantharium*), the western extreme of Samos, is bold and steep-to, the 100-fathoms line being only 2 cables distant.

**Cape Dominiko** (*Lat. 37° 41' N., Long. 26° 37' E.*), the south-west point, is also bold and steep-to. This portion of the coast is very broken, but with no dangers outside its numerous small bays. 30

**Maratrokampo bay.**—Small vessels sometimes anchor in Maratrokampo bay, east of Cape Dominiko, but it is necessary to be close in-shore as the water is deep, and the shore bank is very steep. The best berth is in 4 or 5 fathoms, sand, and a third of a mile from the shore, with the houses on the beach in line with the village of Maratrokampo on the hill. The squalls from the mountains are very violent during northerly winds, and therefore the anchorage is not recommended; even in moderate northerly winds, the squalls sweeping down the hill side are highly dangerous, and many small vessels are annually upset or dismantled in this vicinity. 40

**Harbour.**—A small harbour, with a depth of  $1\frac{1}{2}$  to  $2\frac{1}{4}$  fathoms,

*General chart 2836a.*

*Chart 1537, Furni islands, &c. Var. 2° 30' W.*

has been constructed. It is formed by two breakwaters about 80 and 300 yards long respectively.

**Water** may be procured here from an aqueduct, which, however, is sometimes dry.

**Samo pulo islet**, off the eastern point of Maratrokampo bay, and  $2\frac{1}{4}$  miles westward of Cape Colonna (ancient *Ampelus prom.*), the southern point of Samos, is about a mile in length, and 4 cables from the shore; its northern and north-western points are foul, there being a rock with less than 6 feet water over it lying one cable north of the North point, and a rock awash, 3 cables west-north-westward from the north entrance point of the little bay on the west side of the islet. Midway between the islet and Samos there are from 20 to 25 fathoms water; the mainland within rises from the bold shore to a mountain called Prophetes Elias, 2,455 feet high.

*Chart 1530, The Strait of Samos.*

**Anchorage.**—There is excellent anchorage in any convenient depth with northerly winds all along the south-eastern coast of Samos, from Karavotra, the small rocky islet eastward of Cape Colonna, to Point Psili, including Tigani and Misocampo bays; the best anchorage is perhaps in the latter, in 8 fathoms, sand and mud, near the centre of the bay. The River Mitelinous, a small stream, ends apparently before reaching the sea here, but it is dry in summer, or is then turned off for the purpose of irrigation.

**Karavotra**, the small rocky islet nearly  $1\frac{1}{2}$  miles east-north-eastward of Cape Colonna, the south-western entrance point of Samos strait, is half a mile from the shore, which is bordered by shoal water; and 3 cables south-westward from the central part of the islet is a rocky shoal with less than 6 feet on it, and 17 fathoms close to.

*Plan of Port Tigani on 1878.*

**Port Tigani** (Lat.  $37^{\circ} 41' N.$ , Long.  $26^{\circ} 58' E.$ ) is on the south-east coast of Samos, and affords room for a limited number of vessels. A breakwater about 500 yards long extends over the site of an ancient mole from the western point of the entrance, having a number of stone bollards to which large steamers and other vessels secure their sterns, while taking in or discharging their cargoes. In the inner port, situated in the north-west corner, quays have been constructed, and there is a depth of 6 to 13 feet.

In the outer port, to which the breakwater affords some protection from southerly winds, there are depths of from 17 to 27 feet.

The port will be known by the conspicuous and picturesque monastery of Metamorphosa, standing over the coast on the western side. Much of the marble required to build it was taken from the old city;

*General charts 1530, 3446, 1546, 2836a.*

*Plan of Port Tigani on 1878. Var. 2° 30' W.*

it was fortified, but is now uninhabited, and fast falling to decay, like many other interesting remains on the island. See view on chart 1530.

Tigani is an indifferent village, having only a few good houses, with 5 unpaved narrow stony streets, scarcely passable.

*Chart 1530, The Strait of Samos.*

**LIGHTS.**—A light is shown, at an elevation of 65 feet, from a mast on white house, situated 40 yards back from Glykora point, on the eastern side of entrance to Port Tigani (*Lat. 37° 41' N., 10 Long. 26° 59' E.*).

*Plan of Port Tigani on 1878.*

A light is shown from the end of the breakwater; and another from the southern end of the mole on east side of the inner harbour.

*Chart 1530, The Strait of Samos.*

**Port Mollah Ibrahim.**—In the small Port of Mollah Ibrahim, near the south-east end of Samos, the water is deep for anchoring, but the holding ground is good. The shore round the port abounds with wild liquorice. Græpodi point, on the western side of entrance, should be given a berth of more than a cable; on this point 20 and on Kukura point, on the other side of the strait, are the foundations of two circular buildings, which, from their positions, perhaps were formerly used as lighthouses.

**Aspect.**—The land over Mollah Ibrahim is 837 feet high, and when open eastward of Cape Prason, the north-eastern point of Samos, 25 forms two peaks appearing from the northward like a saddle. These hills, rising close over the south-eastern extreme of Samos, with the Samsun dagh on the left, are conspicuous, and form excellent marks for entering the strait from the northward.

**SAMOS STRAIT, or Samos Boghaz.**—The island of 30 Samos is separated from the mainland by a strait about 9 cables wide at its narrowest part, about half a mile eastward of the islet of Panagia, but between that islet and Samos the distance is only 6 cables; a 5-fathoms rocky shoal lies 3½ cables north-eastward of Panagia, nearly midway between the islet and Samos. With this exception, the strait 35 is clear of danger at a prudent distance from the shore.

**Panagia islet** (ancient *Narther*), situated on the south side of the strait, 3½ cables northward from Agios Nikolo point, is about 2 cables in length, north-north-east and south-south-west, and is separated from the mainland by a channel 2 cables wide and 13 fathoms 40 deep.

**Directions.**—In proceeding through Samos strait, vessels may pass on either side of Panagia islet, which is not high; but the northern passage is the wider and mostly preferred. Care must be taken to avoid the 5-fathoms rock in the middle of the northern channel. 45

*General charts 1546, 3446, 2836a.*

*Chart 1530, The Strait of Samos. Var. 2° 20' W.*

**Current.**—The current generally runs to the eastward and sometimes as fast as 3 to 4 knots; but southward of the islet, at times, it sets westward and varies in direction. During northerly winds the squalls in this strait are not so heavy as off the western end of Samos, and with the favourable current it is easy to work to windward.

**CAPE PRASON** (*Lat. 37° 47' N., Long. 27° 06' E.*), the north-eastern extreme of Samos, is the termination of a high, rugged, bold, clifty peninsula called Dumuz burnu, projecting 2½ miles eastward from Mount Zodoki, 1,228 feet high.

At about 1½ cables eastward of the cape is a rocky patch with 6 fathoms water on it. (*See view of Cape Prason and Samsun dagh on chart 1530.*)

**Dascalio point**, nearly 4 miles west-north-westward from Cape Prason, is a bold projecting point, surrounded by five small islets, which are steep-to on their seaward sides.

**PORT VATHI**, on the north side of the eastern part of Samos, is the principal port in the island. It runs in 2½ miles south-eastward between high wooded land, and from a mile in breadth at the entrance narrows within to about half this distance, but widens again at its head. The water at the entrance is deep, but in the inner part of the port there are from 6 to 20 fathoms. Although a heavy swell sets in, with north-westerly winds (the usual summer wind), the anchorage is good, the holding ground excellent, and with common precautions vessels never drive.

**Breakwater.**—There is a breakwater, 370 feet long, at Kachuni point.

There are three wooden piers for discharging cargo on the south side of Malagari point. Sand can be obtained on the south side of the point.

**LIGHTS.**—A light, elevated 131 feet above the sea, is exhibited from a mast on white house, situated 200 yards back from the northern part of Kotzikas point, the north-east entrance point of Port Vathi.

A light, elevated 19 feet above the sea, is exhibited from a mast at the extremity of the breakwater extending from Kachuni point, on the north-east side of, and about half a mile from, the head of the port.

**Anchorage.**—The best berth is on the south-western side, near a white house and garden, in 13 fathoms, mud, sheltered from the swell by Malagari point, the low sandy point to the north-westward, on which are situated some conspicuous wine stores. Merchant vessels lie in from 10 to 3 fathoms water, mud. A good berth for a large ship is in 7 or 7½ fathoms with a conspicuous peak between two windmills bearing 120° true, and the Health office open northward of the flag-

*General charts 1546, 3446, 2836a.*

*Chart 1530, The Strait of Samos. Var. 2° 30' W.*

**staff.** The water shoals rather suddenly from 7 to 5 fathoms, but more gradually from 5 to 2 fathoms.

**Directions.**—Bound for Port Vathi (*Lat. 37° 46' N., Long. 26° 59' E.*) from the northward, bring Samsun dagh to bear about 126° true, and steer for it. Port Vathi will be known, by being the lowest land under the saddle between the two peaks of the mountains. (*See view on chart 1530.*) There is no danger lying far off the shores of the port, excepting a small rocky shoal with 2½ fathoms water on it, in the bight about half-way in, on the north-eastern side, but it is rather out of the way of vessels, unless beating in or out.

**Caution.**—The harbour is subject to heavy squalls from the hills.

**The town of Vathi,** at the head of the port, is the present capital town, and largest in the island. Here are situated the palace of the Prince of Samos, and the Government buildings. It has a quay along the entire sea front, with a depth of 6 feet alongside, and a well-made zigzag carriage road connects the town to upper Vathi. The town is well built, clean, possesses free schools, and a free public hospital, and the sewage is being improved.

**Supplies.**—Small supplies may be obtained here, but no fuel.

**Water.**—Vathi has waterworks, and water is supplied by hose over the quay into lighters or ship's boats.

**Consul.**—A British Vice-Consul resides here.

**Communication.**—There is telegraphic communication with Europe and the principal ports of Turkey, and telephonic communication with the principal villages in the island. There is frequent steamship communication with Marseilles, Piræus, Crete, the Egyptian coast, also with the neighbouring islands.

*Plan of Karlovassi harbour on chart 3446.*

**Karlovassi.**—A harbour with two breakwaters has been constructed at Pankosi point, near Karlovassi, on the north coast of Samos, 12 miles to the westward of Port Vathi. The eastern breakwater runs 333° true for 300 yards. The western breakwater, starting 430 yards to the westward, runs 12° true 250 yards, and then about 65° true 250 yards, leaving an entrance 130 yards wide. The general depth in the harbour is 16 feet and alongside the quay, between the breakwaters, 10 feet.

**Light** (*Lat. 37° 48' N., Long. 26° 42' E.*).—A light is shown at an elevation of 33 feet from an iron framework on the end of the west pier.

**Communication.**—Steamers of the Pantaleon Company call at Karlovassi harbour once a week from Rhodes; the town of Karlovassi about a mile distant is a telegraph station.

*General charts 1546, 3446, 2836a.*



*Chart 1537, Furni islands, &c. Var. 2° 20' W.*

**Port Zeitani**, or Devil's harbour, is a small harbour formed by some rocks about  $2\frac{1}{2}$  miles to the south-westward of Karlovassi harbour, but is exposed and seldom used.

5 *Chart 3446, Paspargo islet to Samos strait.*

**GULF of SKALA NUOVA.—Coast.**—From Agios Nikolo point, south side of the Strait of Samos, the coast, formed by the base of Samsun dagh (*see* page 374), trends eastward for  $14\frac{1}{2}$  miles to Ghiour Changli, being bold, rugged, and steep-to, the last 6 miles forming the southern shore of the Gulf of Skala Nuova. The width of the gulf across the entrance, from the southern shore to Bolemo island to the north-north-westward, is about 24 miles.

At Ghiour Changli, where a stream flows into the sea, the coast becomes low and curves north-eastward and northward for about 15 7 miles, and then westward for one mile to Aslan burnu or El Kolimveithra, a prominent point, forming a bay, the shores of which are cultivated in parts, the hills retiring to a distance of one to 2 miles from the sea. There is, however, an isolated hill on the shore, with the ruins of a fort on it, at  $2\frac{1}{3}$  miles south-south-eastward of Aslan burnu. The shore of the bay is bordered by a narrow shoal bank, 20 which in the northern part extends off a quarter of a mile.

From Aslan burnu the coast trends  $2\frac{1}{4}$  miles northward to Yalanghi burnu, a cliffy point, and is bordered by a shoal bank.

**DANGERS.—Xerata Kargan adasi shoal.**—Kargan adasi is the name given to the islet about one mile north-north-westward from Aslan burnu. This islet is close to a point, off which lies an extensive shoal with from  $1\frac{1}{4}$  to  $2\frac{1}{4}$  fathoms of water on it, and 6 fathoms between it and the shore bank, which here extends off about 2 cables. The outer extremity of Xerata Kargan adasi shoal, with 30 depth of  $2\frac{1}{4}$  fathoms, lies three-quarters of a mile west-north-westward from the north-west point of Kargan adasi (*Lat. 37° 51' N., Long. 27° 16' E.*).

**Petroma reef**, with less than 6 feet water on it in places, lies westward of Yalanghi burnu, the outer part, with a depth of 35  $2\frac{1}{2}$  fathoms, being nearly 6 cables westward from the point.

There is a narrow passage, which may be taken by small coasters, inside both shoals. As these dangers are steep-to, and the hand lead of no use, this part of the coast should be given a wide berth.

**Aspros Kavo**, a remarkable projecting white cliff, about  $1\frac{1}{4}$  miles 40 north-eastward of Yalanghi burnu, is surrounded by rocky ground which extends off 2 cables, with less than 6 feet water on its outer edge, and steep-to. Between these two points the coast forms two bights, the western one small, and the eastern about 9 cables wide; on the south shore of the latter is the town of Skala Nuova.

*General charts 1546, 2836a.*

*Chart 3446, Paspargo islet to Samos strait. Var. 2° 20' W.*

**Kus adasi**, with a square tower on it, lies 3 cables north-eastward of Yalanghi burnu, and one cable from the point separating the two bights mentioned above, near the south-west end of the town.

**LIGHT** (*Lat. 37° 52' N., Long. 27° 16' E.*).—A light is shown, at an elevation of 98 feet above the sea, from a mast on white house, situated on the north-west extreme of Kus adasi. 5

**The anchorage** is between Kus adasi and the shoal ground, off Aspros Kavo, in 15 to 16 fathoms, soft mud, and entirely open to the westward. It is exposed to all winds from North, round by west to S.W.; between these points, during summer, the sea breezes invariably blow, often with considerable strength, and almost always sending in a heavy swell, and, although the holding ground is good, it is not considered safe for large ships. Coasters obtain some shelter under the lee of Kus adasi. As the sea breezes alternate with the land winds, vessels under sail can leave the anchorage at night or early morning. 10 15

**Skala Nuova** (ancient *Neapolis*) stands partly on level land, and partly on the slope of a hill. It contains about 3,000 houses, 2,000 of which form the Turkish town upon the level, and is enclosed within walls, the gates being regularly closed at sunset, when all Christians are excluded; the streets are ill-paved and dirty. A mountain stream runs down the Greek quarter, over a bed of rock, and has a pretty effect. The population is about 12,000. 20

**Communication.**—There is telegraphic connection with the rest of the civilised world. 25

**Kuchuk Mendere** (*Lat. 37° 57' N., Long. 27° 18' E.*) (ancient *Caystrus*) enters the sea 5 miles northward of the town of Skala Nuova; it is fronted by a bar, and interrupted by fishing weirs. The stone embankments, which once confined the river, are in many places still visible, but the landmarks at the termination of the embankments are now at a considerable distance from the sea, and the space between them and the beach is now an unwholesome marsh. 30

The land in the vicinity of the river's mouth is low and covered with rushes, but 8 cables south-eastward of the river's mouth, and 6 cables from the shore, is a hill 750 feet high and a cultivated plain behind it. At about half a mile off the shore there are from 10 to 18 fathoms water, muddy bottom. 35

**Anchorage.**—For the purpose of visiting the ruins of Ephesus, temporary anchorage, in fine weather, will be found on the bank stretching off Kavo Mikron Taliane, a point 2 cables westward of the ruined bridge at the northern end of the low shore, and 1½ miles northward of the river's mouth. The bridge should be brought to bear 65° true, distant about a mile; a square ruin (St. Paul's prison) on a hill 375 feet high, 107° true, and the entrance to the Kuchuk Mendere 40

*General charts 1546, 2836a.*

*Chart 3446, Paspargo islet to Samos strait. Var. 2° 20' W.*

and place of landing 128° true, distant  $1\frac{3}{4}$  miles. In coming to an anchor the lead should be kept going; this anchorage is considered preferable to that of Skala Nuova. It is advisable to land on the north  
 5 side of the river, and to cross it about half a mile up, where it is 40 yards wide, in a ferryboat. It is about an hour's walk from the beach to St. Paul's prison, and an hour and a half to the centre of the ruins near a large archway.

**Ruins of Ephesus** (*Lat. 37° 58' N., Long. 27° 22' E.*).—At  
 10 about 3 miles from the sea, on the southern bank of the river, are the extensive ruins of Ephesus, at one time the largest and most frequented city in Asia Minor, but now presenting little but scattered and mutilated remains of its ancient grandeur. Christianity was established in the city by St. Paul, and Ephesus became one of the seven churches of  
 15 Asia. St. John resided here, and probably died here; his tomb is shown near the quarries on Mount Prion. A little way above the site of Ephesus is a bridge of seven arches, through which the river winds clearly and without impediment. The sides of the mountains are in some places very precipitous, and in others scooped into hollows filled  
 20 with large trees.

The population of the modern town is only about 400, and it is an unhealthy place, with few facilities.

See Asia Minor on page 5.

**Communication.**—Ephesus is connected by railway with  
 25 Smyrna, and with a town called Dinair, 186 statute miles (by rail) eastward of Ephesus. It is also in connection with the European telegraphic system.

**Coast.**—From the Kuchuk Mendere the coast trends to the northward and westward in a curve for 5 miles to Ghiour kioi bay. At first  
 30 the coast is low, and within it is a large lagoon which communicates with the sea, with a plain behind it; which becomes a wet marsh in winter, and was the ancient swamp of Selinusia; the low shore is bordered by a shoal bank, which extends off about half a mile, and the soundings are irregular. The latter part of the coast is hilly and  
 35 rocky.

**Ghiour kioi bay** (ancient *Klaros*).—In case of necessity during off-shore winds, a vessel may drop an anchor for temporary purposes in Ghiour kioi bay westward of the village, but close inshore, as the water is deep; there is no shelter from the southward. There is a good  
 40 road from here to Smyrna through a fertile country, and the journey on horseback occupies about 8 hours.

**Coast.**—From Ghiour kioi bay, the coast as far as Cape Bugali, a distance of 6 miles, is irregular, with small bays and points with ruins and a few villages.

*General charts 2836a, b.*

*Chart 3446, Paspargo islet to Samos strait. Var. 2° 30' W.*

Cape Bugali (*Lat. 38° 01' N., Long. 27° 06' E.*) is the end of a tongue of land projecting a quarter of a mile southward, and is the eastern extreme of Lebedos bay.

**Lebedos bay** is 10 miles across from Cape Bugali to Bolemo islet, and is backed all round at a distance of from 3 to 4 miles by mountainous land, Mount Alewan (ancient *Gallesus*) over the eastern part being 2,940 feet high. The water all round is rather deep for anchoring, excepting within half a mile of the shore, and it is completely open to the southward.

At 4 miles to the north-westward of Cape Bugali the river Malkeji enters the sea through a small low delta. At half a mile southward of the extreme of the delta is the little islet of Pondiko, with depths of 9 and 20 fathoms between it and the shore.

In the centre of the head of the bay is a small round projection (once the islet of Xingi), united to the beach by a neck of sand, on which are some ruins, and on the adjoining shore are the ruins of ancient Lebedos, whence the bay derives its name.

**Hypsili or Plisi islet**, about a quarter of a mile in extent, and 186 feet high, lies  $5\frac{1}{2}$  cables south-eastward from the termination of the promontory forming the western side of the bay; some rocks, above water, lie close to the southern point of the islet. Between the islet and the main there are from 10 to 20 fathoms.

A rock, which shows, lies about 2 cables off the eastern part of the islet, with 5 fathoms water between them and 9 fathoms close outside the reef.

**Bolemo islet or Nisi Bulme** (ancient *Makris*).—On the west side of the southern termination of the promontory which separates Lebedos bay from Sighajik bay is Bolemo (*Lat. 38° 02' N., Long. 26° 53' E.*), a bold and rocky islet; it fronts a little cove, and, together with the point eastward of it, forms a small harbour, 3 fathoms deep; rocky shoal ground extends about a cable from the south and west sides of the islet. On the shore at the head of the cove are some hot springs. At 3 miles within the point the land is 910 feet high, and  $1\frac{3}{4}$  miles beyond, 1,345 feet above the sea. Bolemo islet is the north-western entrance point of the Gulf of Skala Nuova.

**SIGHAJIK BAY.**—This bay is  $13\frac{3}{4}$  miles wide across the entrance between Bolemo islet and Cape Koraka to the west-north-westward, and extends northward  $9\frac{1}{2}$  miles, the width towards the head being about  $6\frac{1}{2}$  miles. The water is deep, except near the shores and in the approach to Port Sighajik, in the north-east corner of the bay.

**Coast.**—From Bolemo islet, the eastern extreme of Sighajik bay, the coast trends 7 miles to the northward to Malkiar head. At one mile from Bolemo islet is a bold projection, 190 feet high, and

*General charts 1645, 2836b.*

*Chart 3446, Paspargo islet to Samos strait. Var. 2° 30' W.*

covered with ruins, named Ovraeo Kalessi (ancient *Myonnesus*); it is joined to the coast by a neck of land, on either side of which is a little bay. In the northern one small coasting vessels anchor off a sandy beach, in from 4 to 2 fathoms water.

**Palamo islet** or **Palamut adasi**, a mile to the southward of Malkiar head, lies close to the shore and has some ruins on it.

**Malkiar bay** is separated from Teos bay to the north-west by a tongue of shallow rocky ground projecting southward from the shore upwards of one mile, upon which are three islets; on Hadji Futi, the inner and largest of these, are some ruins; and Aspro islets, the outer two, have white cliffs.

There is a depth of from 5 to 10 fathoms in the bay, but it, as well as Teos bay, is exposed to the southward.

**Malkiar head**, the south extreme of the bay, is conspicuous from its green cliffs; it is bordered by shallow water.

**Teos bay**, to the eastward of Chelik point, has depths of from 5 to 10 fathoms, but in the middle of the entrance there is a shoal patch with a depth of 3 fathoms.

**Chelik point**,  $2\frac{1}{2}$  miles to the north-westward of Malkiar head, is bold and steep-to; the coast trends northward from the point for  $2\frac{1}{4}$  miles to the entrance of Sighajik harbour, and is irregular, about 200 feet high, and with deep water about a quarter of a mile from it. On the plain at the rear of the ridge are the ruins of Teos.

*Plan of Sighajik harbour on 1878.*

**Sighajik harbour** (Lat.  $38^{\circ} 12' N.$ , Long.  $26^{\circ} 48' E.$ ), in the north-eastern corner of Sighajik bay, is about a mile deep in a south-easterly direction, with from 6 to 8 fathoms over sand and mud in the anchorage; in the entrance the depths are 10 to 14 fathoms between Sighajik island and the bold coast of the mainland to the northward. Shoal water under 3 fathoms extends from the head of the harbour, with a width of half a cable off the town, and increasing to 2 cables farther northward.

**Sighajik island**, on the south-western side, is 2 cables in length, with Island reef extending more than half a cable from its north-west extreme. Kybleh point, eastward of the island, and the southern entrance point of the harbour, in line with the south side of Quarry hill (about 200 feet high, somewhat like the frustum of a cone, distant one mile from the town in a south-easterly direction), bearing  $114^{\circ}$  true, leads northward of the reef. On this bearing Kybleh point is also in line with the summit of a hill 405 feet high,  $3\frac{1}{2}$  miles from the head of the harbour.

*General charts 3446, 1645, 2836b.*

*Plan of Sighajik harbour on 1878. Var. 2° 30' W.*

In the narrow channel between the island and Kybleh point the depth is 2 to 2½ fathoms, but nearly in the middle is a rocky shoal with as little as 3 feet water on it.

**Directions.—Anchorage.**—Approaching the harbour from the south-westward, Cape Koraka, the western point of entrance to Sighajik bay, although bold, with deep water close to, should be given a wide berth in a vessel under sail, to avoid the baffling winds frequently encountered in its vicinity. The harbour is not easily distinguished at a distance, but its position will be known by a deep valley about 2 miles westward of it, which appears like an opening in the land. From the south-eastward a white patch near the summit of the hill on the western side of this valley is a good mark.

Having rounded Sighajik island reef with the mark given above, steer in about mid-channel ; the anchorage is in about 8 fathoms, good holding ground, and well sheltered. During fine weather vessels may anchor outside the harbour in from 15 to 20 fathoms, west-south-westward from Sighajik island, when, should the wind blow hard from the south-west, the harbour will be under the lee.

**Sighajik town** (*Lat. 38° 12' N., Long. 26° 49' E.*), at the head of the harbour, is of some commercial importance, and from it supplies of beef, poultry, fruit, and water may be readily obtained. It is about 20 miles from Smyrna, with which city it is in frequent communication.

Sailing vessels bound to Smyrna, and unable in consequence of strong northerly winds to pass northward of Khios, or to work through Khios strait, frequently anchor in Sighajik harbour, and send their goods overland to that city.

*Chart 3446, Paspargo islet to Samos strait.*

The western and northern shores of Sighajik bay are irregular, and form several little bays or coves. On the western side, and 2 miles northward of Cape Koraka, is Port Vromo, an inlet extending nearly a mile north-westward, having in the central part from 25 to 10 fathoms, and deep water close to the shore. Coasting vessels occasionally enter the port.

About 3 miles to the northward of Port Vromo are some remarkable white marks on the coast.

On the north shore, and about 2 miles eastward of the north-west corner of the bay, is Port Erekevi, an inlet nearly half a mile in extent, 7 to 10 fathoms deep, with a sandy beach.

**CAPE KORAKA** (ancient *Korykeion* prom.) (*Lat. 38° 06' N., Long. 26° 37' E.*) is a high bold headland, the southern termination of Mount Korykos, which about 5½ miles inland rises 2,328 feet above

*General charts 3446, 1645, 28366.*

*Chart 3446, Paspargo islet to Samos strait. Var. 2° 30' W*

the sea, the land about two-thirds of a mile within the cape being 1,280 feet high. Viewed from any direction seaward, the cape is a prominent object, and the water is deep close to its base.

- 5     **Kavaki bay**, on the west side of the promontory of Cape Koraka, runs in northward  $1\frac{3}{4}$  miles; it is over three-quarters of a mile wide at the entrance, converges within, is clear of danger, and carries from 56 fathoms in the entrance to 3 fathoms near the head.

*Plan of Port Sikia on 1635.*

- 10    **Port Sikia** (Lat.  $38^{\circ} 11' N.$ , Long.  $26^{\circ} 32' E.$ ) is 4 miles north-north-westward of Kavaki bay, the coast between being irregular, but steep-to.

- Port Sikia extends in about one mile north-eastward, and is one-third of a mile wide, with two small arms at its head, where one or two little  
15 streams run into the sea. There are from 10 to 5 fathoms water in the middle of the port, but it is exposed to the south-west; there is, however, just within the entrance on the south-east side a well-sheltered inlet with from 7 to 3 fathoms, suitable for small craft. The steep white cliffs on the north-western side of the entrance mark the  
20 locality.

*Plan of Port Mersin on 1635.*

- Port Mersin** is rather more than 3 miles west-north-westward of Port Sikia, the coast between being irregular, rugged, and steep-to; midway there is a small bay with a depth of 7 fathoms, open  
25 to the south-westward. Port Mersin is  $1\frac{1}{2}$  miles in length in a north-north-west direction, and from one mile to half a mile in breadth, having from 12 to 6 fathoms water. It is fronted by three islands and sheltered from all winds, except from the S.S.E., through the narrow entrance. The two inner islands are united by rocks to the  
30 shore on either side. A small islet lies nearly midway between these two islands, and is connected to the western one by a bank of 3 fathoms. The passage into Port Mersin is between the little islet and the eastern island; it is  $1\frac{1}{4}$  cables wide and 11 fathoms deep.

- Tavates island**, the southernmost of the three, is distant one-  
35 third of a mile from the island north-north-westward of it, with depths of 4 fathoms between, but in the middle there is a rocky shoal with less than 6 feet water on it. Small vessels may pass between the islands, avoiding the rocky shoal, but the ship passage is southward of Tavates island, and eastward of the islet between the two inner  
40 islands.

**A reef** with rocks above water extends 2 cables south-south-westward of Tavates island, which should be given a fair berth in rounding.

*General charts 3446, 1645, 2836b.*

*Plan of Port Egrilar on 1568. Var. 2° 30' W.*

**Port Egrilar** (*Lat. 38° 15' N., Long. 26° 24' E.*).—From Port Mersin to Port Egrilar the coast is nearly straight in a north-westerly direction for 3 miles, but it should not be approached too closely. Port Egrilar extends 2½ miles in a north-north-easterly direction, and is 5 over a mile wide at the entrance, but narrows to less than half this distance within; inside, the general depths are from 16 to 6 fathoms water, mud bottom, but its shores are bordered all round by shallow water, especially near the head, where a large portion is nearly dry. Great caution is therefore necessary, on entering, to keep in mid-channel, as the soundings are not in sufficient detail, and there are no 10 good leading marks for avoiding the shoal banks, which, however, on a bright clear day, are plainly indicated by the discoloration of the water.

The eastern point of entrance to the port is a white cliff, and the 15 hill immediately over it is 146 feet high; on the western side, nearly half a mile northward from the western entrance point, is a sharp peak 264 feet high. The land on either side is hilly, but at the upper part of the port it is low, dry in summer, but marshy in winter, when a stream runs into it. See view of the entrance to Port Egrilar, on 20 plan.

**Egrilar**, chiefly composed of storehouses for dried currants, is near the head of the port, on the western shore, with a pier and Custom house. The town of Latzata, containing about 15,000 inhabitants, is 1½ miles northward of the village, but hidden from the anchorage by 25 a range of hills; a good road from Egrilar leads to it. The town of Latzata suffered greatly from an earthquake on 3rd April, 1881.

*Chart 3446, Paspargo islet to Samos strait.*

**Coast.**—From Port Egrilar the coast trends west-north-westward 7 miles to Cape Bianco. The soundings off this part of the coast are 30 irregular; shallow water will be found in places some distance from the shore, and it should be given a wide berth. In the bay which the coast forms south-eastward of Cape Bianco are four small rocky patches, having from one to 4 fathoms water on them; they each lie about 4 cables from the shore, and between the distances of a little less 35 than a mile and 2 miles eastward of the Wedge, or southern extreme of the cape, with deep water between them.

**CAPE BIANCO** (*Lat. 38° 16' N., Long. 26° 15' E.*).—Cape Bianco (ancient *Argennum* prom.), as its name implies, consists of white cliffs of moderate elevation, conspicuous from the south-westward, and in shape somewhat resembles the Bill of Portland, on the 40 south coast of England. The south-western face of the cape is bordered at a short distance by shoal water, and its northern end is also surrounded by a rocky bank, which extends off about one cable. The

*General charts 3446, 1645, 2836b.*



*Chart 3446, Paspargo islet to Samos strait. Var. 2° 40' W.*

distance between the rocky bank and Panaghia islet, westward of it, is about 9 cables.

- Anchorage.**—There is anchorage south-eastward of Cape Bianco in any convenient depth, sandy bottom, which is much frequented by vessels unable to get through Khios strait during strong northerly winds. Vessels anchoring here should be prepared to get under weigh before a southerly wind sets in, and care should be taken to avoid the rocky patches before mentioned, by choosing a berth in not less than 10 fathoms, within half a mile of the Wedge. If farther south-eastward a vessel should not go inside the line joining the extreme points of the bay, or within a depth of 16 fathoms.

- Before proceeding to describe the mainland coast to the northward of Cape Bianco, and Khios strait, a description of Psara and Khios islands will be given.

For description of the Kaloyeri rocks, lying on the same parallel and nearly equidistant between Cape Doro of Eubœa and the south end of Khios, *see* page 169.

*Plan of Psara island on 1891.*

- PSARA ISLAND**, 27 miles north-eastward of the Kaloyeri rocks, is  $4\frac{1}{2}$  miles in length, north and south, and nearly 4 miles in breadth at its northern end, which is the widest part. It is lofty, and Mount Elias, the greatest elevation rising at the northern end, can be seen at a great distance. Situated on the inner part of Paleo Kastro (Lat.  $38^{\circ} 32' N.$ , Long.  $25^{\circ} 35' E.$ ), the south-western point of the island, is Psara, an indifferent town, partly in ruins, and at its southern extreme is a peaked rocky elevation, on which stands the fort or castle\* ; (*see* view on plan). The population of the island is about 3,500, all Greeks.

- Port of Psara.**—Under the east side of the town there is a small mole, with 2 to  $2\frac{1}{2}$  fathoms within, over muddy bottom, which affords shelter to a few small trading vessels.

- Anchorage.**—The anchorage in Choralolimani, though exposed to the south, is considered secure during the summer months, as the holding ground is good, and it is an excellent place of shelter during strong winds from the northward. A fair berth is in 12 fathoms, with the two southern points of the island (eastward of

\* During the Greek war of independence, the inhabitants of this little island, numbering about 6,000 when the war began, but which was more than doubled by Christian refugees from Asia Minor, Macedonia, and Thessaly, acquired an imperishable renown from the damage they inflicted on the Turks. The Sultan, however, determined to crush them, and at daybreak on the 3rd July, 1824, about 200 vessels with 14,000 troops attacked the town, and landed in a small cove on the north side of the island. The Psarians, after a gallant resistance, set fire to the powder magazine, and defenders and conquerors alike perished in the explosion. The subsequent carnage was awful; although about 2,000 persons escaped from the island, 3,000 were missing, and the loss of the Turks was 4,000.—*See Murray's Handbook for Greece.*

*Plan of Psara island on 1891. Var. 2° 50' W.*

the bay) in line, bearing 93° true. Farther out the bottom is rocky and uneven.

Vessels sometimes lie in a cove and secure to the shore, inside Thaskalo, a small rocky islet at the northern end of the bay on the western side of Psara island. 5

There is also occasional anchorage southward of Anti Psara, off which end of it is Katu-nisi, another small rocky islet, but between the two there is no passage.

**Paleo Kastro point**, on which the fort stands, is surrounded by rocks, and should be given a berth of at least  $1\frac{1}{2}$  cables; on the eastern side of the point is a shoal with 3 feet water on it. 10

**Kokino pulo**, the south-eastern point of Psara island, is also bordered with shallow water to a distance of  $1\frac{1}{2}$  cables on the east side.

**LIGHT**.—A light is shown at an elevation of 246 feet from a white circular tower, 39 feet high, situated on Kokino pulo, at about 220 yards from the extremity of the point. 15

**SHOALS**.—**Anti Psara**, lying  $1\frac{1}{4}$  miles westward of the southern part of Psara island, is about  $1\frac{1}{2}$  miles long, north and south, and  $1\frac{1}{3}$  miles across its southern end, which is widest. When passing between the islands a vessel should keep close to Anti Psara to avoid the following shoals:— 20

**Rock west of Psara town**.—Between Windmill hill and the town of Psara, at a quarter of a mile from the coast, is a rocky shoal with 3 feet water on it, and 12 fathoms between it and the shore; this danger is in the way of vessels working to windward. 25

**Kuchopata shoal**, with  $4\frac{1}{2}$  fathoms on it, lies midway between Psara and Anti Psara, being distant 8 cables east-north-eastward from Xerathia tu Cava (*Lat. 38° 33' N., Long. 25° 33' E.*), the north-east extreme of Anti Psara. The latter has a reef extending from it in the same direction one cable. 30

**Rock**.—A 2-fathoms patch lies 167° true, distant one mile from Turusi Pulo, the north-west extremity of Psara island. Between this rock and the reefs extending from the Psara shore the distance is a quarter of a mile and depth 42 fathoms. 35

**Mustapha**, with less than 6 feet water on it, is the name given to the outer of a group of rocks below and above water extending 3 cables north-westward from Turusi Pulo.

**A rock**, having only 6 feet water on it, lies  $4\frac{1}{2}$  cables westward from Markaki, the central point on the north coast of Psara island; from the rock, this point and that of Tritispela, the north-east 40

*General charts 1645, 2836b.*

*Plan of Psara island on 1891. Var. 2° 40' W.*

extreme of the island, are nearly in line. To pass northward of this danger, when coming from the eastward, keep the latter point well open of the former, until the little rocky islet of Agios Georgios bears southward of 232° true.

**Another rock**, with less than 6 feet water over it, lies 2 cables off the eastern point of Xera Chukanarlu bay, bearing 238° true, distant three-quarters of a mile from Markaki point.

**Current.**—On the western side of Psara, the current generally sets to the northward.

**Caution.**—As the current sets strongly on to the northern side of Psara island, it is advisable, especially in a sailing vessel, with light winds, to give this side of the island a fair berth.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

**15 KHIOS or SCIO ISLAND.**—This important island is 27 miles in length, north and south, and varies in breadth from 7 miles in the centre to 15½ miles at the northern and 12 miles at the southern end. The population in 1913 amounted to 78,830, of which the great majority were Christians of the Greek church. It is rocky and mountainous throughout nearly its whole extent, Mount Elias (ancient *Pelinaeus*), its greatest elevation, at the northern end, being 4,157 feet high. Southward, the mountains gradually decrease in height, and terminate at the southern extreme in Cape Mastiko, a bold prominent headland, about three-quarters of a mile northward of which a hill over the eastern coast is 960 feet high. The hills are for the most part composed of a red-coloured marble streaked with white, and round the city are quarries of reddish freestone.

Cape Agios Nikolo (*Lat. 38° 33' N., Long. 25° 51' E.*), the north-western point of the island, is 10 miles to the eastward of Psara island, the channel being deep and clear of danger.

**Productions.**—Khios island is celebrated for its beauty and fertility, and the climate is healthy and most delightful. It produces olive oil, figs of a large size, grapes, oranges, citrons, lemons, almonds, and other fruits, which are exported both dried and fresh. Wine is made in large quantities and held in some repute, and khaki (a spirituous liquor distilled from raisins) is the best in the archipelago. Much silk is also produced and manufactured into stockings, gloves, gowns, &c. The gum-mastic, one of its chief sources of wealth, is the product of a species of lentisk (*Pistacia lentiscus*); the other productions are sweetmeats, candied citrons, preserved cherries, syrup of cherries, conserve of roses, rose and orange flower water, &c.

Khios island possesses a great number of fine springs, and water is

*General chart 2836b.*

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 40' W.*  
found everywhere by digging. The chief town or city is Scio, on the eastern side of the island.\* (For Khios strait, *see* page 400.)

**Trade.**—The exports consist principally of leather, mastic, oranges, lemons, and almonds; and the imports, principally manufactured goods 5 and hides.

**Cape Mastiko** (*Lat. 38° 09' N., Long. 26° 02' E.*), the southern extreme of Khios, is a bold abrupt headland, and at about  $1\frac{1}{2}$  miles southward of it is the high conical islet of Venetiko, with from 25 to 52 fathoms water all round, and no danger between it and the cape; 10 both show well at night.

**The current** off Cape Mastiko is strong and uncertain.

**Coast.**—From Cape Mastiko the coast extends  $9\frac{1}{2}$  miles to the north-westward to Cape Amista, being bold and broken with several small bays, but no anchorage and no off-lying dangers. From Cape 15 Amista it trends to the north-eastward.

**Rocks.**—Brown rock, dry, and nearly connected with the shore, from which it is distant about  $1\frac{1}{2}$  cables, is  $1\frac{1}{2}$  miles to the northward of Cape Amista; and Black rock, also dry, and three-quarters of a mile farther north-eastward, is 4 cables from the shore, with deep water 20 between.

**Ports Mesta and Aluntha.**—Between Cape Amista and Cape Agios Nikolo, about 18 miles to the northward, the coast forms a deep bight without anchorage, excepting at Volisso (*see* below). Port Mesta is on the southern shore of the bight, and is easily distinguished by an 25 ancient watch tower situated on the western side of entrance. The head of the port is slightly protected from the northward. There are seven houses, most of which are inhabited (1917). Aluntha is a small inlet about midway along the shore of the bight, at the head of which are some salt springs. Both ports are fit only as places of refuge for 30 small vessels, and are destitute of fresh water.

**Aspro isles**, in the south-eastern corner of the bight, afford shelter to vessels of about 20 tons. Their vicinity abounds with fish.

**Volisso road**, in the northern portion of the bight, affords the only anchorage for any but very small vessels; vessels may anchor 35 here during northerly winds when unable to get through the channel between Psara and Khios.

**Anchorage.**—The old castle of Kastro on the hill, bearing about 0° true, and the left extreme of Khios island, 296° true, will be a fair berth. A small islet lies inshore, united to the main by a reef, over 40 which there is no passage.

\* On Sunday, the 3rd April, 1881, Scio was visited by a terrible earthquake, which nearly destroyed the whole town and 45 villages; its effects were felt at Chesme, and Smyrna, and also at Karystos in Euripo, Tinos, Syra, &c. About 4,000 persons were killed, and a large number wounded. The greater portion of the inhabitants were left utterly destitute, and the misery was intense. Many of the wounded were sent to Smyrna. Provision had to be made for housing over 40,000 people, most of whom lost not only their houses, furniture, clothing, and money, but also many of their cattle.

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 40' W.*

The promontories on the western side of Khios island bear a close resemblance to each other, and this side of the island is comparatively uninhabited, all the principal villages being on the eastern side.

5 Volisso and Mesta are the chief places.

**Cape Agios Nikolo** (*Lat. 38° 33' N., Long. 25° 51' E.*) (ancient *Melena Akra*), the north-western point of Khios, will be recognised by the round tower on its summit; shoal water extends off it one-third of a mile and along the coast northward, and also southward, about two-thirds of a mile off.

**Squalls.**—In south-easterly gales, the squalls off the Amanei mountains, over the north-western part of Khios, are severe, and sailing vessels bound through the Psara channel should keep at a distance from the land.

15 **Current.**—The current along the western side of Khios generally sets to the northward.

**Cape Anapomera**, the northern extreme of Khios, situated 9 miles east-north-eastward of Cape Agios Nikolo, is the termination of Mount Elias, the greatest elevation of the island, which at 2½ miles southward of the cape rises 4,157 feet above the sea; its rugged precipitous sides and bluff cone-shaped rocky summit render it conspicuous and most useful in fixing a vessel's position at a distance.

25 With the exception of Ghertis, a large rock above water, a mile eastward of Cape Anapomera, and 4 cables from the shore, there are no off-lying dangers along the northern coast of Khios at a prudent distance, nor is there anything to induce a vessel to be in close proximity to the land.

*Plan of Spalmatori islands and Port Kolokithia on 1635.*

**Port Marmaro** runs in about a mile, and has depths of from 30 14 to 3 fathoms, mud bottom. Commander Wharton, of H.M.S. *Fawn*, in December, 1879, writes:—"Port Marmaro, though apparently an admirable harbour in southerly winds, has bad holding ground. The *Fawn* anchored in 7 fathoms water, near the head of "the port, and with a long scope of cable dragged twice with a clear "anchor, and even moved after a second anchor had been let go. "There is a good deal of weed at the bottom. The wind was from "South, force 8, in squalls which came down the valleys with great "suddenness. No directions are necessary for entering this port, but "as a shelter it is well to avoid it altogether."

40 The port is very exposed to the northward.

**Port Parapanta.**—At about 6 miles south-eastward of Cape Anapomera, and immediately eastward of Port Marmaro, is an inlet open to the northward, with depths of 14 and 10 fathoms, mud bottom, called Port Parapanta. Off the point which separates the two ports is

*General charts 1645, 2336b.*

*Plan of Spalmatori islands and Port Kolokithia on 1635. Var.  $2^{\circ}40' W$ .* Margariti islet, under the south-western side of which there is anchorage for a small vessel. The south-east point of the islet is connected with the shore by a reef.

**Coast.**—From Cape Pampakas, the eastern entrance point of Port Parapanta, the coast trends to the south-eastward for  $1\frac{1}{2}$  miles to Cape Vrulidia, a prominent headland. At three-quarters of a mile from the former cape and  $3\frac{1}{2}$  cables from the shore is Glastri, a large rock above water, with a reef on its western side; rocks also project nearly half-way across from the coast abreast. There are 36 and 38 fathoms water close outside Glastri rock.

**Strovilo islet** (*Lat.  $38^{\circ} 33' N.$ , Long.  $26^{\circ} 11' E.$* ), close off Cape Vrulidia, has a passage inside it for boats. Strovilo islet is conspicuous and of a conical form, with a few rocks at its base, but the water is deep near it.

From Strovilo islet a bold cliffy coast trends to the southward for one mile to Cape Kaminaki, which, as well as the coast nearly one mile to the southward, is bordered by rocks; from these rocks the coast trends to the southward for another 2 miles to Port Kolokithia, being broken and steep-to.

**PORT KOLOKITHIA** extends westward about three-quarters of a mile, and is more than half a mile wide, with from 30 to 10 fathoms water, but in the middle of the entrance there is a patch with 6 fathoms water. The port is separated from the inlets to the southward by Cape Sidero, on the northern side of which a shoal spit extends more than a cable northward. The usual anchorage is in the south-western corner, off the valley in which are some houses, in from 20 to 10 fathoms water, mud bottom. A small stream runs into the sea during winter. *See view on plan 1635.*

In the north-western corner of the port is a small green islet, with a passage inside it for boats, and having a cove on each side; the western cove is shoal and muddy, and a good place to beach a vessel in case of necessity; the eastern cove is nearly 2 cables wide, from 15 to 6 fathoms deep, and a small vessel may anchor here and make fast to the shore.

From the cove to the northern point of entrance to the port the shore trends eastward, and for a distance of 4 cables is bordered by a shoal bank half a cable wide, with a small rock above water on its edge, about 2 cables from the cove, and steep-to; with this exception the coast is clear and bold.

Water may be obtained from a spring near the head of the western cove.

**Agios Stephano islet**, about  $2\frac{1}{2}$  cables in length, low, and rocky, lies  $5\frac{1}{2}$  cables south-eastward of Cape Sidero, and fronts two

*General charts 1645, 2836b.*

*Plan of Spalmatori islands and Port Kolokithia on 1635. Var. 2° 40' W.* inlets extending to the south-west and south, fit for small vessels; at the head of the inlets are salt springs.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

- 5 **East coast of Khios.**—The shore for about 6 miles southward of Agios Stephano islet forms several little points, and after the first 2 miles is bordered by a narrow bank, but beyond the distance of about one-third of a mile the water is deep; in the northern portion are one or two coves, and the shore is steep-to.

- 10 *Plan of Port Scio or Kastro on chart 1645.*

- PORT SCIO or KASTRO** (*Lat. 38° 23' N., Long. 26° 09' E.*), 6 miles southward of Agios Stephano islet, is nearly rectangular in shape, the basin being walled round by quays and protected from the sea by two moles. The length of the harbour is about 750 yards and  
15 breadth 360 yards. The central portion is dredged to a depth of 30 feet, and the rest to 13 feet, excepting that alongside the south quays and north mole there is only a depth of 6 feet. The north mole extends about 142° true 270 yards to the ruined fort, and then about 115° true 160 yards, both parts being slightly curved. The south mole runs  
20 341° true, straight, 360 yards; the width of the entrance is 115 yards.

On the north mole, and near the ruined fort, are situated the Health office and Harbour-master's office.

- On the northern side of the port is the citadel, surrounded by Scio, the town and capital of the island, which, with the suburbs, extend  
25 between 3 and 4 miles along the coast, and, being interspersed with trees and gardens, has a pretty appearance from the sea.

- LIGHTS.**—**North mole.**—Two lights placed vertically, the upper one at an elevation of 59 feet above the sea, are shown from a mast on white hut on the south angle of the ruined fort on the north  
30 mole.

Another light is shown, at an elevation of 29 feet, from a mast on white hut on the extreme end of the mole.

- South mole.**—A light is shown, at an elevation of 29 feet, from a mast on white hut on the end of the south mole. This is, however,  
35 very difficult to recognise, being in line with the lights of the town.

- Shoals.**—Two shoals of 4½ fathoms, the positions of which are doubtful, lie northward of the entrance to the port. The outer shoal is 1¾ cables northward of the extremity of the north mole and 1¼ cables from the northern part of it; the other lies about a cable westward of  
40 the outer shoal and 150 yards from the shore.

**Directions.**—The coast bank is very steep, deepening in places from 9 to 14 fathoms, then 18, and the next cast no sounding with

*General charts 1645, 2836b.*

*Plan of Port Scio or Kastro on chart 1645. Var. 2° 40' W.*

hand-lead. The best way to choose a berth under sail is to close with the shore and approach the anchorage before the wind, avoiding any spits of white water that may be seen and round out into the necessary depth.

**Anchorage.**—The anchorage off the town of Scio commences at about half a mile southward of the entrance to the port, and continues as far as 2 miles northward of it. A large ship should be in from 12 to 18 fathoms water; a good berth is in 12 fathoms, muddy bottom, at about three-quarters of a mile north-westward of the citadel. A berth will also be found abreast of the northern range of windmills, which stand on a kind of beach, and are the third range of mills from the port. A vessel may anchor nearer the port, but the holding ground is not so good, the bottom being soft mud, and in getting under weigh in a sailing vessel the anchor comes away before the cable is up and down.

Being near the port is more convenient for boats, which is a consideration in the autumn months, when the north-easterly winds blow with great violence, causing at times a considerable swell, and rendering it difficult for them to return to the shore.

**Telegraph cables.**—Five cables are landed at a cable house situated about a mile southward of the entrance to the port. One starts in a northerly direction for Tenedos island, two are laid to Chesme across the strait, and the other two go to Syra. Vessels should avoid anchoring over them.

**Coal** (*Lat. 38° 23' N., Long. 26° 09' E.*).—No coal is kept in stock.

**Water** is supplied in open lighters, but is expensive.

**Hospital.**—This is a spacious, well-appointed institution, free to all, irrespective of creed and nationality.

**Communication.**—Steamers call frequently. There is telegraphic connection with the general system.

**Consul.**—A British Vice-Consul resides in the town of Scio.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

**Cape Agia Helena** (*Posidium prom.*), 2½ miles to the south-south-eastward of Port Scio, is a low rugged point, rising gradually to a round hill, upon which is an old tower, and it should be given a wide berth to avoid the elbow of the bank southward of it, which extends half a mile from the shore, with 3½ fathoms on it, and is steep-to; the white sandy bottom, at times, is plainly visible when in its vicinity. The coast to the northward is bordered by a bank, which extends off 1½ to 4½ cables.

*General charts 1645, 2836b.*



*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 40' W.*

**Katomeri point** (*Lat. 38° 19' N., Long. 26° 11' E.*) is a mile to the southward of Cape Agia Helena, and between them the shore forms a small bay, with shallow water extending seaward two-thirds of  
5 a mile, the elbow of the bank mentioned above.

**Megalo and Kalamuti bays.**—These two bays on the south-eastern side of Khios, separated from each other by the land terminating in the cliffs of Capes Nenitè and Gredia, are convenient stopping places for vessels bound through Khios strait during strong northerly  
10 winds.

Megalo bay is south-west of Katomeri point. In the northern part of the bay there is anchorage during northerly winds in 8 to 10 fathoms, sand and weed, with Paspargo lighthouse bearing about 90° true. Within the bay are the mastic plantations, from the cultivation of  
15 which a considerable revenue accrues. This shrub does not thrive in any other part of the island, and it has often been tried without success.

Cape Nenitè (*Lat. 38° 14' N., Long. 26° 08' E.*), the south extreme of Megalo bay, is formed by steep white cliffs with flat tops, and on its  
20 southern side is a ruined tower.

In Kalamuti, the southernmost bay, vessels may anchor in the northern part where convenient, in 16 to 14 fathoms, sand and weed.

Water may be obtained in Kalamuti bay.

**Current.**—The current round this end of Khios is strong and  
25 uncertain, but in Kalamuti bay it generally sets to the northward.

**KHIOS STRAIT**, separating the island of Khios from the mainland, is narrowed at the southern entrance by the islets of Paspargo and Panaghia, but the passages between Paspargo and Khios and between Panaghia and the mainland are wide and clear.

Northward of these islets the strait is wide, and also clear, if we  
30 except the Kumuthi shoals on the eastern side. North-eastward of these shoals is the island of Goni, in front of the bay of Eritra, on the south. In the northern part of the strait the Spalmatori islands lie in an oblique direction across it, leaving deep and clear channels on  
35 either side of them, the channel between the south-eastern end of the islands and the mainland being upwards of 3 miles wide.

Khios strait affords several anchorages and stopping places, such as the bays immediately north and south of Cape Bianco; Kalamuti, Megalo, and Chesme bays, Port Kolokithia, and the anchorages in the  
40 Spalmatori islands. It is well lighted, and with the most ordinary attention its navigation is easy.

**Currents.**—In the Strait of Khios, between Cape Agia Helena and Cape Bianco, and in the channels on either side of the Spalmatori islands, with fresh north or north-easterly winds, no ordinary sailing

*General chart 2836b.*

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 40' W.*

vessel can work to windward, but must anchor in one of the bays already mentioned until a change takes place, when, with a southerly wind, the current will run strong to the northward.

*Chart 3446, Paspargo islet to Samos strait.*

**Paspargo and Panaghia islets.**—These little islets lie near the middle of the southern entrance to Khios strait, and are rather more than half a mile apart, with from 7 to 10 fathoms water between them, excepting midway, where there is a 4-fathoms rocky patch. The northern end of Paspargo is skirted by sunken rocks, and similar rocks lie off each end of Panaghia. The passage between the former islet and Khios, as also that between Panaghia and Cape Bianco, are clear of danger, except the narrow shore banks.

**LIGHT** (*Lat. 38° 18' N., Long. 26° 13' E.*).—A light is exhibited, at an elevation of 138 feet above the sea, from a white stone tower on the summit of Paspargo islet.

*Plan of Spalmatori islands, &c., on 1635.*

**SPALMATORI ISLANDS.**—These islands, in the northern part of Khios strait, consist of two large islands and numerous islets, and together occupy a space of  $6\frac{1}{2}$  miles in a north-west and south-east direction, with irregular coasts.

**Agnussi**, the largest and westernmost of the group, situated  $1\frac{1}{10}$  miles east-south-eastward from Cape Vrudidia, the north-eastern extreme of Khios island, is  $4\frac{2}{3}$  miles in length, and its most elevated part towards the western end is 555 feet high. A hill with a beacon on it, about a mile from the south-eastern point, is 478 feet high, and called Beacon peak.

**Reef.**—The north-western part of Agnussi is bold, but a reef which borders the western face of this end of the island extends  $1\frac{1}{2}$  cables northward from the north-west extremity. With this exception, and the reef bordering Cape Kaminaki, the passage between Spalmatori islands and Khios is about 9 cables wide, clear and deep, and is called Spalmatori channel.

**Temporary anchorage.**—There are anchoring depths, on the north side of the island, eastward of the reef just mentioned, over coarse sandy bottom, and in case of actual necessity a steam vessel might drop an anchor here during southerly winds, but it would be necessary to leave directly any indication of a change took place. This is the only place to anchor on the northern side of these islands, the water elsewhere being too deep.

**Kio islands** are two small flat islets close together, and surrounded by shoal rocky ground, which extends off north and south rather more than a cable. These islets lie  $1\frac{1}{10}$  miles south-eastward

*General charts 1645, 2836b.*

*Plan of Spalmatori islands, &c., on 1635. Var. 2° 40' W.*

of Cape Kaminaki of Khios, and 7 cables from the coast of Agnussi island.

**Rock.**—At  $5\frac{1}{2}$  cables,  $119^\circ$  true, from the southern Kio islet, and one-third of a mile from Agnussi, is a rock, awash, with shoal water around it. The water is deep near these islets and rock, and they should be given a fair berth.

**Mandraki islet**,  $1\frac{3}{4}$  miles east-south-eastward from the southern Kio islet, is the outermost of three low islets situated on a bank extending half a mile south-south-eastward from the south-western coast of Agnussi between two inlets, and separated from the shore and from each other by boat passages.

**Shoal.**—At about a quarter of a mile east-south-eastward of Mandraki islet is a shoal patch with  $4\frac{1}{2}$  fathoms water on it.

**Rock.**—At rather more than three-quarters of a mile eastward of Mandraki islet is a cliffy point, the southern termination of Beacon peak, off which, at 2 cables from the shore, is the outer edge of a rocky patch with less than 6 feet water on it, and 10 fathoms between it and the coast.

Between the cliffy point and the south-eastern end of Agnussi there are two small inlets, the western with 6 fathoms in the entrance, and the eastern with from 8 to 3 fathoms water.

**Anchorage** will be found in places along the south-western side of the Spalmatori group, the bottom sand and mud, or sand and weed, available during strong north-easterly winds.

*Plan of Ports Boghazi and Pasha on 1568.*

**Pasha island** is nearly 2 miles in length, and its northern end is separated from Agnussi by a narrow passage; with 2 fathoms water, leading into Port Boghazi on the south. The little bays on the western side of Pasha island, with those on the eastern end of Agnussi and the islets fronting them, form the Ports of Pasha and Boghazi.

**LIGHT** (*Lat.  $38^\circ 00'$  N., Long.  $26^\circ 18'$  E.*).—Situated 280 yards from the eastern extreme of Pasha island is a white stone tower, from which a light is exhibited, at an elevation of 246 feet above the sea.

At the lighthouse is a white dwelling with red roof.

A reef extends nearly a cable from the eastern extreme of the island.

**Port Boghazi** is the western and narrower of the two ports, and the entrance is  $1\frac{3}{4}$  cables wide between the shoal bank bordering Gavathi islet, 150 feet high, and the reef extending southward from the islet of Arkondo on the north-west; the channel to the anchorage is nearly a mile in length, and carries from 20 to 10 fathoms water. The anchorage is northward of Pondiko islet in from 10 to 12 fathoms, sand, with better shelter from southerly winds than Port Pasha affords.

*General charts 1645, 2836b.*

*Plan of Ports Boghazi and Pasha on 1568. Var. 2° 40' W.*

**Port Pasha** is between the island of the same name and Vaton island on the east, and Gavathi and Pondiko islets on the west; this port is open to the southward, and the bottom is irregular and rocky. A narrow passage, 4 fathoms deep, between Gavathi and Pondiko islets, leads from Port Pasha to Port Boghazi. A reef extends  $1\frac{3}{4}$  cables westward from the south-west point of Pasha island, with a large rock above water near the end, on which the depth is  $2\frac{1}{2}$  fathoms. 5

**Vaton island** is surrounded by a reef, and separated from Pasha island on the north by a narrow 4-fathoms passage. 10

**Shoals.**—At the western end of Vaton is a small islet, and about one cable north-westward of the islet is a rocky shoal with 2 fathoms water on it.

A shoal, with  $4\frac{3}{4}$  fathoms water on it, lies 120° true, nearly half a mile from Pasha island lighthouse, and 4 cables east-north-eastward from Cape Turko, the south-east extremity of Pasha island. 15

**Caution.**—The soundings in this locality not being in sufficient detail, caution must be used in approaching the shores.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

**Egri-liman channel.**—The passage between Pasha island and Uch islets, southward of Port Egri-liman, on the west side of the peninsula of Kara burnu, is  $3\frac{1}{2}$  miles wide, clear and deep, and called Egri-liman channel. 20

**MAINLAND COAST.**—**Cape Bianco** is described on page 391. Between its northern extremity and Kezil point,  $2\frac{3}{4}$  miles north-eastward, the coast, which is white chalk cliff, bends southward and forms a bay. At about three-quarters of a mile eastward of the northern part of Cape Bianco is a little islet surrounded by shoal water, lying within the 5-fathoms line of soundings, which passes round the southern side of the bay more than half a mile from the shore; within this distance the water is shallow. 25 30

**Temporary anchorage.**—During strong southerly winds, there is anchorage in this bay north-eastward of the northern part of Cape Bianco, in 10 to 12 fathoms, over coarse sand, good holding ground, for any number of vessels, but they should be prepared to leave in the event of a change of wind to the opposite quarter. 35

*Plan of Chesme on 1635.*

**CHESME BAY.**—**Kezil point** (*Lat. 38° 20' N., Long. 26° 18' E.*), the south entrance point of Chesme bay, projects northward, is of a red colour, and steep-to on the western side, but shoal water extends a little northward and along the shore eastward of the point at the distance of a cable. 40

*General charts 1645, 2836b.*

*Plan of Chesme on 1635. Var. 2° 46' W.*

**LIGHT.**—A light is shown, at an elevation of 65 feet above the sea, from a lighthouse on the extremity of Kezil point.

**Kaloyeri reef** lies in the approach to Chesme, and, within the  
5 depth of 5 fathoms, is  $3\frac{3}{4}$  cables in length north-west and south-east,  
and from one to  $1\frac{1}{2}$  cables in breadth. On it are several rocks with  
less than 6 feet water, and over other parts 2 to 4 fathoms; close to its  
edge there are from 7 to 13 fathoms. The outer part of the reef, with  
10 depth of 5 fathoms, is about one mile, and the inner end about 6 cables,  
west-north-westward from Kezil point lighthouse.

**Beacon.**—Near the centre of the reef is a conical beacon about  
10 feet high, bearing  $291^\circ$  true, distant  $7\frac{3}{4}$  cables from Kezil point  
lighthouse. From a similarity of colour the beacon is not easily dis-  
cernible when seen against the land. See view of the beacon on plan  
15 1635.

Cape Mastiko, the southern extreme of Khios, open southward of  
Cape Gredia, and also just open of the land of Cape Bianco, bearing  
 $229^\circ$  true, leads south-eastward of the reef; but there will be no doubt  
about being south-eastward of it if Kezil point lighthouse is passed  
20 within the distance of a quarter of a mile.

At night, from the north-westward, keep Kezil point light bearing  
southward of  $132^\circ$  true.

**Kara dagh point** is a broad headland on the south side of  
Chesme bay, dividing Aiasmata bay from Chesme harbour.

25 **Anchorage.**—There is anchorage at one-third of a mile eastward  
of Kezil point lighthouse, in about 10 fathoms, good holding ground.  
Nearer the town the bad holding ground, as shown on the chart north-  
ward of Kara dagh point, is about  $1\frac{3}{4}$  cables in length in an east and  
west direction, and three-quarters of a cable in breadth, with rocky  
30 bottom; trading steamers anchor farther northward, where the holding  
ground is good. Large ships may choose a berth 3 cables north-east-  
ward of the lighthouse, in 12 fathoms, or farther north-westward, as  
convenient, in 15 or 16 fathoms, mud.

35 **Telegraph cables.**—Two telegraph cables are landed on the  
south-east side of Aiasmata bay.

**Chesme town** (*Lat.  $38^\circ 20'$  N., Long.  $26^\circ 19'$  E.*) (ancient *Kys-  
sus*), on the eastern side and near the head of the bay, is pleasantly  
situated partly on the face of a slope, crowned by the ruins of an old  
castle. It contains several mosques, a Greek church, public baths,  
40 Custom house, and numerous coffee-houses. See views of harbour and  
town on plan 1635.

**Trade.**—A great quantity of raisins are exported, and nearly all  
the fruit sold in the British islands as Smyrna raisins is grown in this  
neighbourhood.

*General charts 1645, 2836b.*

*Plan of Chesme on 1635. Var. 2° 40' W.*

**Population.**—The population is about 7,500.

**Communication.**—Chesme is connected with the general European telegraph system. Steamers call frequently.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

**KUMUTHI POINT.**—From Chesme harbour, the coast, which is clear of danger, trends northward, gradually decreasing in height to Kumuthi (ancient *Mesate*) point, a distance of 3 miles. Kumuthi point is low and surrounded with rocks; it forms, with Paramesa point,  $1\frac{1}{2}$  miles eastward, the entrance of an inlet  $1\frac{1}{2}$  miles deep, having from 18 to 5 fathoms water, mud bottom. There is a narrow passage northward of Kumuthi point into Eritra bay, which may be used by small vessels rounding the point carefully and feeling the way in by the lead.

**KUMUTHI SHOALS** (*Lat. 38° 24' N., Long. 26° 18' E.*) are a cluster of rocky patches on a shoal upwards of  $1\frac{1}{2}$  miles wide, extending  $1\frac{1}{2}$  miles northward of Kumuthi point, with deep water close to on its western and northern sides. Some of the rocks are nearly awash, others have less than 6 feet water on them, and in places 2 and 3 fathoms, with deep water between. Near the western edge of the shoal, and a little more than three-quarters of a mile north-westward from Kumuthi point, is Kumuthi islet, about 150 yards in extent, oval in form, and composed of red earth and loose stones.

Kumuthi shoals are the chief danger in the navigation of Khios strait: the bottom is so level and deep, and the bank so steep-to, that soundings will not indicate approach, and therefore, when passing them, a vessel's position should be checked by bearings. The line joining the two lights of Paspargo islet and Pasha island passes one mile westward of these dangers: to ensure safety, therefore, when in their vicinity, Paspargo islet light should be kept bearing southward of 200° true, and Pasha island light eastward of 20° true.

In that case, with Kezil point light bearing 164° true, a vessel will be to the north-westward of the shoals. The south extremes of Makro and Platia islets in line, bearing 82° true, lead northward of Kumuthi shoals.

**ERITRA BAY.**—This extensive bay is eastward of the peninsula of which Kumuthi and Paramesa points are the northern extremes. Its shore is irregular, with several projections, bays, coves, islets, rocks, and shoals, and for the navigation of which the chart must be the guide. The north-eastern part of the bay is covered by the promontory of Mavro Vuni (the summit of which is 1,044 feet high), projecting nearly 3 miles south-south-westward; the angle which it makes with the coast on the south is called Mavro Vuni bay. At the head of this

*General charts 1645, 2836b.*

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 30' W.*

bay there are anchoring depths, as well as in places along the coast south-eastward of it.

The town of Eritra (ancient *Erythræ*) is on the shore in the south-eastern part of the bay, westward of a peninsula extending 3 miles north-westward and terminating at Keras point, but the town is of no commercial importance. The town is fronted by several islets and shoal patches.

**Goni island** (*Lat. 38° 27' N., Long. 26° 21' E.*) is the largest of a group of islands in front of the bay of Eritra, between Kumuthi shoals on the south-west and the promontory of Mavro Vuni on the east, having passages on either side of the group. The islands occupy a space of 4 miles east and west, and about half this distance north and south, and with Kumuthi shoals may be considered part of the eastern boundary of Khios strait.

**Makro islets**, the two western of the above group, are close together, with from 9 to 28 fathoms between them and Kumuthi shoals. The passage between these islets and Goni island is deep, but narrowed by a large rock above water rather nearer Goni, and other dry rocks one-third of a mile eastward of the southern Makro islet.

**Meso and Platia**, the two eastern islets of the group, are united by a reef; the passage between Meso and Goni is deep, and about one-third of a mile wide; a large rock, above water, lies at the southern entrance. The passage between Platia and the promontory of Mavro Vuni is clear and deep and 6 cables wide.

**Trago rocks** above water and surrounded by others under water are three-quarters of a mile to the eastward of Mavro Vuni point, the southern extreme of the peninsula of the same name.

**PENINSULA OF KARA BURNU.**—The peninsula of Kara burnu, between the shores of Eritra bay on the west and the Gulf of Gul-Baghche on the east, where it is nearly 3 miles across, extends north-north-westward about  $16\frac{1}{2}$  miles, with an extreme breadth of about  $9\frac{1}{2}$  miles, and the summit of Boz dagh, its greatest elevation, is 3,906 feet high. Its coast is high and bold, nearly everywhere clear of danger, except on the west side, with deep water at a short distance. In sailing vessels the shore of the peninsula should not be approached too near, as the wind may become light. See view on chart 1645.

*Plan of Port Egri-Liman on 1635.*

**PORT EGRI-LIMAN.**—The entrance to this port (ancient *Phœnicus*) is  $5\frac{2}{3}$  miles northward of Mavro Vuni point, and rather more than 4 miles 57° true from Pasha island lighthouse. The western side of the port consists of a narrow irregular cliffy peninsula trending northward parallel to the coast for  $1\frac{2}{3}$  miles. It is a narrow inlet,

*General charts 1645, 2836b.*

*Plan of Port Egri-liman on 1635. Var. 2° 30' W.*

open to the north, 2 cables wide at the entrance, which width gradually decreases to about one cable 6 cables from the entrance, whence to its head is a mud flat with from 3 to  $1\frac{1}{2}$  feet water over it. The depth of the port varies from 12 fathoms near the entrance to 5 fathoms about one cable before the commencement of the mud flat just mentioned. Local vessels frequently seek shelter in this port.

**Beacon** (Lat.  $38^{\circ} 32' N.$ , Long.  $26^{\circ} 23' E.$ ).—A white beacon, on a hill 108 feet high, stands near the northern end of the peninsula. See view of entrance to the port on plan 1635.

**A shoal** with  $2\frac{1}{2}$  fathoms water on it lies  $1\frac{1}{4}$  cables north-westward from the north extreme of the peninsula and 2 cables from the beacon.

**Utch islets.**—At 7 cables south-south-westward of the extremity of the peninsula are Utch islets, a cluster of three little islets and rocks extending nearly 3 cables from a rocky point, and steep-to.

**Rakos islets**, two in number, lie nearly 6 cables farther south-south-eastward, and about the same distance from the coast as Utch islets. There are 6 fathoms water about 2 cables south-westward of Rakos islets.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

**Shoal patch.**—A quarter of a mile south-eastward of the inner and larger of the Rakos islets, off the western point of a bay, is a shoal patch with 2 fathoms on it.

The coast from Mavro Vuni point northward to Port Egri-liman is high and bold.

**Garen rocks.**—At about  $1\frac{1}{4}$  miles north-north-westward of the entrance to Port Egri-liman are Garen rocks, above water, with a sunken rock close outside them and a depth of 3 fathoms just beyond; they extend about a quarter of a mile westward from the south entrance point of a small indentation known as Garen cove. Two rocks, with less than 6 feet on them, also lie about 3 cables west-south-westward and south-westward, respectively, from the southern extreme of this point. At half a mile northward of Garen rocks is another sunken rock a quarter of a mile from the shore. All these rocks are steep-to.

The peak of Mavro Vuni, open westward of Egri-liman peninsula  $151^{\circ}$  true, leads outside or westward of these dangers.

**Kara burnu.**—From Garen rocks the coast trends northward 6 miles to Kara burnu (ancient *C. Melana*), known by its steep dark cliffs. South-westward is a large rock or islet close to the shore, and south-eastward of the cape, on a hill about  $1\frac{1}{2}$  miles distant, are three windmills.



*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 30' W.*

**Kumur Baba** (*Lat. 38° 41' N., Long. 26° 26' E.*).—At 3 miles eastward of the cape is Kumur Baba, the eastern termination of a steep cliff two-thirds of a mile in length, and the most northern part of the peninsula of Kara burnu.

**Peak of Mimas.**—Between Kumur Baba and Kinlu point, 2½ miles eastward, the coast forms a slight bay. Kinlu point is a bold dark bluff and steep-to. At 1½ miles southward of the point is the remarkable peak of Mimas, in the form of a sugarloaf, and 1,724 feet high; it rises from the northern part of the Boz dagh, the elevated chain of mountains which runs through the peninsula of Kara burnu from the south; it is an excellent mark, and visible from all directions seaward.

*Plan of Port Sahib on chart 1645.*

**Coast.**—The islet of Buyuk Sahib is 2 miles east-south-eastward of Kinlu point; the first part of the coast between is cliffy and steep-to, but Tuzla burnu, about half-way, is rocky, and shoal water, extending off more than one cable, borders the shore southward round Port Sahib.

The islet of Buyuk Sahib is half a mile in length north-east and south-west, 168 feet high, the south-western end being a steep white cliff, declining with a gentle slope to the north-east, where it is also bold and steep-to. With the exception of the north-western part, the islet is bordered all round by a narrow shoal bank, and rocks extend off three-quarters of a cable from its south-west extremity.

**Shoal.**—North-westward of the south-west end of the islet is a rocky shoal 1½ cables in length, north-east and south-west, with one fathom of water on its central part. The western end of the shoal is 2 cables from the islet, and in the narrow passage between there are from 6 to 10 fathoms water. This shoal is separated from the bank off the shore of the peninsula by a passage 2 cables broad, with 7 and 9 fathoms in the middle.

At 3¼ cables southward of Buyuk Sahib is Fanar burnu, a point projecting slightly to the north, and on a hill 299 feet high, a little within it, are three or four mills. Off the north-eastern face of the point is another islet, Kuchuk Sahib, 3 cables in length, north-west and south-east, and bordered by a narrow bank, with a narrow channel 4½ fathoms deep midway between it and the shore.

**Port Sahib** (*Lat. 38° 39' N., Long. 26° 32' E.*).—On the western side of Fanar burnu is a bay which, with Buyuk Sahib islet on the north, forms Port Sahib, with depths of 20 to 10 fathoms, mud bottom. The port is open to the north-east, fit only for small vessels, and not much frequented. It is subject to strong and sudden gusts of wind off the land. The south-easterly winds at times blow with much

*General charts 1645, 2836b.*

*Plan of Port Sahib on chart 1645. Var. 2° 30' W.*

force out of the Gulf of Smyrna, when shelter may be found in this little port. At the head of the bay is a little village and a pier.

There is no danger in entering between Buyuk Sahib and Kuchuk Sahib. In the north-western passage keep about 2 cables from the shore, and in not less than 6 fathoms water, until in the port.

**Water and small supplies** of provisions may be obtained.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

**GULF of SMYRNA.**—Kinlu point of the peninsula of Kara burnu and Cape Hydra or Aslam burnu may be considered the western and eastern entrance points respectively of the Gulf of Smyrna. From a line between Kinlu point and Cape Hydra, which bear from each other 72° and 252° true, distant 13½ miles, the Gulf of Smyrna trends in a south-south-easterly direction 22 miles, then eastward about 12 miles, to the anchorage off the town of Smyrna. Its breadth varies, but narrows as the inner part is approached, when the channel becomes irregular and contracted. The soundings, which are from 43 to 45 fathoms in mid-channel at the entrance, gradually decrease towards the head, and temporary anchorage will be found in case of necessity all over the upper part of the gulf.

The shores of the gulf are opposite in character; the south-western is high and steep, being the base of high mountainous land, whilst a large portion of the north-eastern is a low broken shore with lagoons backed by a plain, but the channel is well lighted and the navigation easy.

A description of the western side of the Gulf of Smyrna, including the Gulf of Gul-baghche as far as Vourlah road, will now be given, following which the eastern shore from Cape Hydra will be described.

**Coast of Kara burnu peninsula.**—The coast from Port Sahib trends in a general south-south-easterly direction nearly 13 miles to Cape Aspro: a sunken rock lies close to Dirsek point, and between Artez point and Cape Aspro the shore is bordered by shoal ground, which extends off the eastern side of the cape a distance of nearly 3 cables.

**GULF OF GUL-BAGHCHE.**—Cape Aspro is the north-west entrance point of the Gulf of Gul-baghche: from this cape the gulf extends southward 9½ miles, decreasing from 3½ miles in width at the entrance to 1½ miles at its head. In the middle, at 1½ miles from its head, is the islet of Hermo, 4½ cables in length east and west, and connected to the eastern shore by a 2-fathoms flat, which borders the shore all round the upper part of the gulf from Kalabak, a point on the eastern shore nearly one mile northward of the islet. Southward of the islet, and between

*General charts 1645, 2836b.*

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 30' W.*

the projecting parts of the flat, there are depths of 3 to 5 fathoms. The soundings, from 15 fathoms at the entrance of the gulf, decrease to 6 and 5 fathoms at half a mile from Hermo islet. The eastern shore of the gulf should be avoided, as it is bordered by shoal water, and about halfway between the end of the promontory (forming the south-eastern entrance point of the gulf) and the head of the gulf is a detached shoal of 2 fathoms, half a mile from the shore; this shoal is also  $1\frac{1}{2}$  miles northward of Kalabak point, just alluded to.

**10 Anchorage.**—Vessels at times during northerly winds anchor under Cape Aspro, in from 10 to 15 fathoms water. In steering for this anchorage the eastern point of the cape should be given a wide berth. Vessels in this vicinity should be prepared for the heavy squalls which occasionally descend from the high land.

**15 CHUSTAN or LONG ISLAND.**—This island, in the middle of the Gulf of Smyrna, is nearly  $5\frac{3}{4}$  miles in length in a north and south direction, about 2 miles in extreme breadth, and its most elevated part, near the centre, is 627 feet high. Its coast is slightly irregular and bordered by a narrow shoal bank, which at the south-western shoulder of the island extends off  $3\frac{1}{2}$  cables, with a small islet on it and rocks awash near its extremity.

Chustan point, the northern point of the island, is a narrow tongue of moderate height, and steep-to; nearly one mile southward of it, close to the western shore, is a little islet with 4 fathoms water inside it.

**25** At the south-western part of the island is a bay, formerly known as English harbour, with depths of 17 to 8 fathoms, but in the eastern part are rocky patches with from 4 to 5 fathoms water on them. A shoal, with  $3\frac{1}{2}$  and 5 fathoms water over it, extends  $3\frac{1}{2}$  cables southward from the south end of the island.

**30** On the eastern side of the island, at about half-way between the north and south points, the coast forms a bay with from 17 to 5 fathoms water; Long point, the southern extreme of the bay, is a cliffy projection of a greyish colour, and over it is a peaked hill of similar appearance.

**35** There is anchorage affording good shelter with good holding ground close northward of Long point.

**Tribune rock** (*Lat. 38° 30' N., Long. 26° 46' E.*).—At  $5\frac{1}{4}$  cables northward from the outer part of Long point, and  $6\frac{1}{2}$  cables from the shore to the west, is Tribune rock, with 2 fathoms water on it, and 5 and 8 fathoms around. The northern point of Yilanejah island,  $157^\circ$  true, well open eastward of Kilsali island, leads eastward of the rock, but a better mark is to keep nearly the whole of Yilanejah open.

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 30' W.*

**Passage west of Chustan island.**—Chustan island is separated from the coast of Kara burnu peninsula by a passage  $2\frac{1}{2}$  miles wide, having from 20 to 6 fathoms water; the central part is clear, but the coast on either side should not be approached too closely, especially the shoal points at the southern end of the passage. 5

**Shoal.**—The passage between Chustan island and the shore of the promontory southward of it is  $1\frac{4}{10}$  miles wide, but a shoal of hard sand and stones, with  $2\frac{1}{2}$  fathoms water on it and about 2 cables in extent, lies in the fairway, its northern end bearing  $341^\circ$  true, distant  $7\frac{1}{2}$  cables from the eastern point of the bay in the north end of the promontory just alluded to. 10

**Clearing marks.**—When passing southward of the shoal, bring the north-eastern extreme of Penarli island in line with the north-eastern sides of Yasajah islets,  $126^\circ$  true, which will lead south-westward of the shoal and also of the 5-fathoms rocky patch  $7\frac{1}{2}$  cables north-westward of it. The southern Yilani islet in line with the south point of Kilsali island,  $122^\circ$  true, leads north-eastward of the shoal and rocky patch. The extremity of the little peninsula north-west of Vourlah road in line with the point north-north-westward of it, bearing  $154^\circ$  true, leads eastward of the shoal. 15 20

**Kilsali island**, less than a mile south-eastward of Chustan island, is  $1\frac{2}{10}$  miles in length, nearly three-quarters of a mile in average breadth, with a hill at its south end, 370 feet high. Its coasts are bordered by shoal water, and in places on the western and south-eastern sides the depth of 5 fathoms is nearly  $2\frac{1}{2}$  cables from the shore, which should be given a wide berth in a vessel of heavy draught. The passage between its north-western end and Chustan island is 7 cables wide, and in the fairway from 16 to 26 fathoms deep. 25

*Chart 1617, Vourlah road.*

**Marathussæ islands** (*Lat.  $38^\circ 24'$  N., Long.  $26^\circ 48'$  E.*).—South-south-eastward of Kilsali is a cluster of islands and islets, the principal of which are named Yilani (flat, and very little above water), Yilanejah, Penarli, Akjadah, and Yasajah; these islands are each surrounded by shallow water, but have deep, though in some cases, narrow passages midway between them. Between Yilani and Yilanejah the depth is  $6\frac{1}{2}$  to 10 fathoms, and between the latter and Penarli 6 fathoms. 30 35

**Caution.**—As some of the soundings on chart 1617 have been enlarged from a smaller scale, extra caution must be used in approaching the shores. 40

**Yasajah island**, 89 feet high, is the westernmost of the four largest of the cluster just mentioned; it is 4 cables in length north

*General charts 1645, 2836b.*

*Chart 1617, Vourlah road. Var. 2° 30' W.*

and south by  $1\frac{3}{4}$  cables in greatest breadth, its southern point being sharp and narrow. Two small islets lie north-westward from its northern extremity, the outer one being 2 cables, and the other one cable distant.

Rocks, awash, lie 2 cables westward from the north end of Yasajah.

West-south-westward 8 cables from the south point of Yasajah island is the outer part of a little peninsula of the main shore. The island and peninsula are connected by a bank with depths under 10 fathoms, and on this bank a patch with only 3 fathoms lies 2 cables from the south point of Yasajah island; a patch of 4 fathoms lies  $3\frac{1}{2}$  cables from the peninsula.

**Clazomenæ islet** is situated 2 miles south-eastward from the extreme of the little peninsula just alluded to, the coast between them forming two bays. The islet is  $6\frac{1}{2}$  cables in length north-north-east and south-south-west, and  $2\frac{3}{4}$  cables from the shore, with which its southern end is connected as described below. It is surrounded by a shoal bank, from half a cable to  $1\frac{1}{2}$  cables wide, on which are numerous sunken rocks; the bank is widest on the west side of the islet. Abreast the middle of the west side there is an opening in the bank half a cable wide, into a small basin, with a depth of 5 fathoms, called the Quarantine port: a sunken rock lies on each side of the entrance to this basin, and on its north side are the remains of an ancient mole. Injerli, a small islet, lies 2 cables north-north-westward of the outer extreme of Clazomenæ, in the centre of a shoal, nearly  $1\frac{1}{2}$  cables in extent.

Clazomenæ islet, together with Injerli, shelter the south-eastern and larger of the two bays above mentioned from the eastward. Further protection is afforded by the remains of the ancient breakwater connecting Clazomenæ to the shore. A new breakwater connecting the islet with the shore has been constructed 8 yards to the eastward of, and parallel to the remains of the ancient breakwater; it has 3 arches under it, the southern one being navigable for small boats. On the island end is a guard house and telegraph station; the poles run along the breakwater. The islet contains the quarantine station.

**Buoy.**—A red buoy is situated at the entrance to the Quarantine port, on the western side of the islet.

**Light.**—An occasional light is shown from a small lighthouse about 20 feet high, on the south end of the breakwater.

**Vourlah Skala** (*Lat. 38° 22' N., Long. 26° 47' E.*) is the name of the landing at the head of this bay for the town of Vourlah which, with a population of about 25,000, is situated  $2\frac{1}{2}$  miles southward. The depths in this bay are irregular, varying from 10 to 3 fathoms.

*General charts 1645, 2836b.*

*Chart 1617, Vourlah road. Var. 2° 30' N.*

Two 3-fathoms patches are situated  $2\frac{3}{4}$  and 4 cables respectively north-westward from the south extreme of Clazomenæ islet.

**Communication.**—A coast road, and daily steamer, connect Vourlah Skala with Smyrna, distant 18 miles; a good road also connects Vourlah with Chesme. 5

**VOURLAH ROAD.**—South-south-eastward and distant nearly one mile from the little peninsula already mentioned is the point separating the two bays. The shore of the north-western bay recedes from this line 4 cables. The 3-fathoms line is very little inside the line joining the peninsula and point, and off the extremities themselves not more than that depth will be found at the distance of a cable. 10

The space between this shallow bay and the islands Yasajah and Penarli is known as Vourlah road, with depths of from 15 to 4 fathoms over mud and weed. 15

*Charts 1617, 1645.*

**Directions.**—Vessels may enter Vourlah road by the passages between any of the larger Marathussæ islands covering the roadstead, or between Yasajah, the western island, and the little peninsula. 20

Approaching Vourlah from the westward of Chustan island, give the islet on the rocky shoal at its south-western part a berth of 3 cables in rounding, then keep the southern Yilani islet in line with the south point of Kilsali,  $122^\circ$  true, until the little peninsula (near the roadstead) is open of the point north-north-west of it. Now steer a mid-channel course for the passage between Yasajah and the little peninsula, giving a berth of 2 cables to the sunken rocks westward of the north end of Yasajah (*Lat.  $38^\circ 24'$  N., Long.  $26^\circ 47'$  E.*). 25

When the south end of Yasajah and the north end of Penarli are in line, bearing  $108^\circ$  true, bring the highest part of Kilsali just open westward of the outer of the two islets at the northern end of Yasajah, bearing  $1^\circ$  true, which mark will lead over the bank extending from the south point of Yasajah island to the little peninsula, in the deepest water, between the 3-fathoms and 4-fathoms shoals already alluded to. 30 35

*Chart 1617, Vourlah road.*

When approaching the roadstead, from the eastward of Chustan island, the passage between Yasajah and Akjadah is the wider, but a vessel should keep in mid-channel, and Yasajah should be given a berth of at least a quarter of a mile to avoid the shoal bank surrounding it. A bank also extends three-quarters of a cable westward from Akjadah, but a mid-channel course will pass south-westward of it. 40

The safest passage to Vourlah road, however, for a large ship is east-

*General charts 1645, 2836b.*

*Chart 1617, Vourlah road. Var. 2° 30' W.*

ward of all the Marathussæ group and between Penarli and the little islet of Injerli, giving a berth of 2 cables to the south end of Penarli. This channel between the 5-fathoms line one cable south of Penarli, and the depth of 10 fathoms half a cable north of Injerli islet, is 6 cables broad, with depths of 10 to 14 fathoms. The passage between Yilanejah and Penarli (*see* page 411) is limited by shoal banks extending into it from either island, and there is no occasion to use it.

Moor in Vourlah road with open hawse to the northward.

10 **Water** (*Lat. 38° 24' N., Long. 26° 46' E.*).—A plentiful supply of water is procurable from a spring on the coast, situated about a third of a mile south-westward of the little peninsula.

**Supplies** of fresh provisions may be had at reasonable prices.

*Charts 1522, 1645.*

15 **South shore of the gulf.**—From Clazomenæ islet already described the south shore of the gulf trends eastward about 12 miles to a low projecting point called Sanjak Kalessi, with a battery and fort on it (Yeni Kale). The shore is backed by high hills, and 2 miles inland and 4 miles south-westward of Sanjak Kalessi are two peaks of  
20 a mountain half a mile apart, 2,864 and 2,922 feet above the sea, named the Brothers, which form a prominent landmark. The shore is all along clear of danger, and may be approached to a reasonable distance.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

25 **EASTERN SHORE of the GULF.—CAPE HYDRA or ASLAM BURNU** (*Lat. 38° 45' N., Long. 26° 45' E.*) (*see* page 409), the eastern entrance point of the Gulf of Smyrna, is the bold termination of elevated land which at 3 miles south-eastward is 1,245 feet high. The cape is steep-to, and near the shore, at about half  
30 a mile south-westward of it, is a little islet called Kartera, with some rocks.

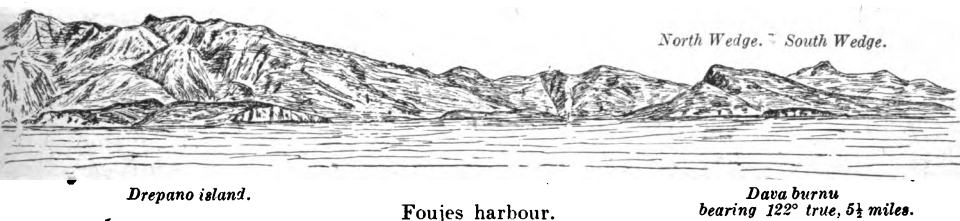
*Plan 1566, Foujes.*

**Iersis islet**, lying  $2\frac{1}{2}$  miles south-westward from Cape Hydra, and  $8\frac{1}{2}$  cables from the shore, is about one-third of a mile in length, north and south, and narrow, with a large rock westward of its central  
35 part. Its southern part is surrounded by a reef which is steep-to, and a narrow spit extends about  $1\frac{3}{4}$  cables eastward from the south point, with a depth of one fathom close to its outer end and 5 and 6 fathoms outside; south-westward of the inner half of the spit depths of 4 and  
40 5 fathoms extend upwards of a cable. Between this reef and a sunken rock, close to the north point of Drepano, the passage is about a third of a mile wide, with 5 to 9 fathoms of water.

*General charts 1645, 2836b.*

*Plan 1566, Foujes. Var. 2° 30' W.*

**FOUJES HARBOURS.**—North and South harbours of this name may be said to be contained between Drepano island on the north and the headland of Dava burnu on the south, the north extreme of the former being  $2\frac{3}{4}$  miles south-westward of Cape Hydra. The two 5 harbours are separated by an irregular tongue of land half a mile long, close to the end of which is an islet with a ruined fort on it, and by the islands of Agios Georgio and Oglak farther westward. Agios Georgio island and the islet are joined by a ledge with one to 10  $1\frac{1}{2}$  fathoms of water on it. *See view below.*



**Drepano island** is rather more than a mile in length, north-west and south-east, lies obliquely to the shore, and is joined to it on the east by shoal ground, on which is situated a small flat islet; eastward of this islet is a narrow channel 2 fathoms deep, leading from the north into Foujes North harbour. On the north-eastern side of 15 Drepano there are anchoring depths in 12 to 8 fathoms, mud bottom, and sheltered from the south-west. A low, hook-shaped sand spit projects from the south point of Drepano island in a south-easterly direction 4 cables.

**Peta.**—The little islet of Peta lies about-three-quarters of a mile 20 eastward from the north point of Drepano island, and  $1\frac{1}{4}$  cables north-westward from a point, with which it is connected by a shoal bank. Shoal water extends also southward one cable and westward half a cable from Peta.

**Oglak** island, moderately high, lies nearly midway between the 25 outer extremes of Drepano island and Dava burnu. It is  $3\frac{1}{2}$  cables in length, east-north-east and west-south-west, by  $1\frac{1}{2}$  cables broad, being of about the same size as, though lying at right angles to the direction of, Agios Georgio to the eastward. It is separated from the latter by a channel  $1\frac{1}{2}$  cables broad, between the shoal water on either side, and 30 7 to 9 fathoms deep.

**LIGHT** (*Lat.  $38^{\circ} 40'$  N., Long.  $26^{\circ} 44'$  E.*).—From the western extremity of Oglak island two lights, placed vertically, are exhibited; the upper light is elevated 105 feet above the sea.

**North harbour**, eastward of the hook of Drepano, is somewhat 35 circular in shape, the diameter of the area with depths of from 5 to

*General charts 1645, 2836b.*



*Plan 1566, Foujes. Var. 2° 30' W.*

13 fathoms being about one-third of a mile. With the exception of the shore of the hook of Drepano, which is moderately steep, the harbour is bordered by shallow water, especially on the east side, where  
5 not more than 2 fathoms will be found a quarter of a mile off. The entrance channel to the above part of the harbour, between the end of the hook and the shoal water extending from the mainland, is  $2\frac{1}{2}$  cables wide, and southward of this is an area about 4 cables in diameter, in which the depths are from 5 to 14 fathoms, mud.

10 **Directions.**—In entering North harbour, pass on either side of Oglak island, between which and the shoal water extending half a cable from the hook there is a depth of 17 fathoms.

**Caution.**—The soundings in the survey of this locality, not being in sufficient detail, caution must be used in approaching the shores.

15 **Deirmen burnu** is the easternmost of two prominent points on the southern shore of South harbour, the western point having on it a Venetian fort, about midway between Dava burnu and the town.

**LIGHT.**—A light is exhibited on Deirmen burnu, elevated 65 feet above the sea.

20 **South harbour** is entered between Agios Georgio island and the point with the Venetian fort  $3\frac{3}{4}$  cables distant; thence, the harbour runs in one mile, with from 20 to 10 fathoms water, soft mud bottom, which is said not to hold well in the heavy south-easterly gales which blow out of the gulf, coming over the high land in a violent manner.

25 Deirmen burnu is separated from the town of Foujes by a well-sheltered basin about  $3\frac{1}{2}$  cables in diameter, in which vessels may anchor in 10 fathoms over sand and mud, or secure to the shore. This basin is bordered all round by a narrow bank. A mile south-eastward from the town is a hill on which stand some windmills conspicuous  
30 from the offing.

**Foujes town** is situated at the head of South harbour and  $1\frac{1}{2}$  miles from Dava burnu.

**Dava burnu** (*Lat. 38° 39' N., Long. 26° 44' E.*) is a small dark cliffy peninsula,  $3\frac{3}{4}$  cables long north and south, and 112 feet high;  
35 it appears like an island, and is united to the shore by a low sandy isthmus, with a little bay 16 to 5 fathoms deep, mud bottom, on its southern side.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

40 **Haji liman.**—This bay, between Dava burnu and Cape Merminji, and one mile from the latter, is three-quarters of a mile deep, a third of a mile wide, with from 15 to 5 fathoms water, and open to the west-south-west. The northern point of entrance is steep-to, but

*General charts 1645, 2836b.*

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 30' W.*

from the south point a reef extends nearly a cable in the direction of the northern point; and half-way in on the southern side is another reef. At the head of the bay is a brook of good water.

**CAPE MERMINJI** lies south-south-eastward a little over 5  
2½ miles from the south end of Dava burnu. It is the termination  
of elevated land, which, at 1¼ miles north-eastward of it, is 1,030 feet  
high, and at 1¼ miles north-westward of this height is another hill,  
845 feet high. These elevations on either side of the head of Haji  
liman are known as South and North Wedge respectively, and are 10  
conspicuous by reason of the land dropping suddenly on the south.  
A shoal spit extends about one cable south-westward from the cape.

**LIGHTS.**—A light is exhibited at 230 feet above the sea, from  
an octagonal white tower, situated 273 yards within the extremity of  
Cape Merminji. 15

Another light is shown from a window in the same tower, below  
the above light.

**Merminji rocks.**—This dangerous ledge of rocks shows in  
places 2 feet above water and is about a quarter of a mile in extent,  
with 8 to 12 fathoms all round the reef. It lies about two-thirds of 20  
a mile from the nearest shore (red cliffs) of Cape Merminji, and mid-  
way there are 12 fathoms water; but between the ledge and the ex-  
treme of the cape is a shoal patch with 3 fathoms on it. During the  
day, these rocks will be seen, and the west end of Oglak island, 347°  
true, well open westward of Dava burnu, leads outside them. 25

At night, the position of the rocks will be known by the sector of  
green light shown over them from Merminji lighthouse.

**AGGRIA BAY.**—**Panagia point** (*Lat. 38° 37' N.,*  
*Long. 26° 49' E.*) is nearly 2½ miles eastward of Cape Merminji, and  
between is a projecting point with a large rock or islet close to it, 30  
eastward of which is a small bay. From Panagia point the shore  
trends north-eastward 2½ miles, then south, and south-westward, form-  
ing the bay of Aggria, which is very shallow, with all its inner part  
an extensive fishery, and Aggria, an inconspicuous islet with ruins on  
it, in the middle. In the south part of the bay, and outside the 35  
fisheries, is a low, narrow island, about 2½ miles in length, with salt  
pans on it.

To prevent further silting up of Smyrna harbour a canal has been  
cut to divert a portion of the water of the River Khediz into Aggria  
bay; the mouth of this canal is 4 cables southward of Aggria islet. 40

**Anchorage**, with good shelter and holding ground, will be found  
on the north side of Aggria bay, about midway between Cape Mer-  
minji and Panagia point, during north and north-easterly winds.

*General chart 2836b.*

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 20' W.*

**Coast.**—From Panagia point to Cordaleo, opposite the city of Smyrna, the coastline consists of a low marshy broken shore, with numerous salt pans backed by extensive plains on which wheat is grown during the summer, but which are flooded in the winter. At about  $5\frac{1}{2}$  miles south-south-eastward from Cape Merminji this broken coast extends westward, forming what may be considered the southern entrance point to Aggria bay.

This point,  $2\frac{1}{2}$  miles broad, is (compared to the rest of this low broken shore) fairly steep-to, the 5-fathoms line being found at from 6 cables to a mile off. The limit of Cape Merminji *red* light nearly coincides with this line. See Clearing marks below.

*Chart 1522, Smyrna harbour.*

**Kokala burnu spit.**—From the broad south entrance point of Aggria bay, the low broken up shore of Smyrna gulf continues first south-eastward, then south and south-westward for some 6 miles to Kokala burnu, forming a bight  $1\frac{1}{2}$  miles deep, from the shores of which with the exception of the extreme points themselves, and one place in the centre between them, not more than 5 fathoms will be found  $1\frac{1}{2}$  miles distant.

The end of the drying portion of Kokala burnu spit bears  $306^\circ$  true, distant  $3\frac{1}{4}$  miles from Yani Khediz or Pelican spit.

The 10-fathoms line passes half a mile from Kokala burnu spit, and a vessel should not approach nearer the point, as the water shoals suddenly to 3 fathoms one cable further in.

**Paleo Khediz spit.**—The low irregular shore between Kokala burnu and Yani Khediz spits, takes the form of a slight bight, off the middle of which the shoal water under 3 fathoms extends one mile from the shore, under the name of Paleo Khediz spit. The outer part of this spit in the depth above mentioned, bears  $286^\circ$  true,  $1\frac{1}{2}$  miles from the dry end of Yani Khediz spit. A tongue with depths under 5 fathoms extends a quarter of a mile farther out.

**Yani Khediz or Pelican spit** (*Lat.  $38^\circ 25' N.$ , Long.  $26^\circ 57' E.$* ) is the name given to the most southerly portion of the low broken-up north-east shore and delta of the River Khediz, the principal mouth of which river, formerly emptied on the spit, but which has now been diverted to Aggria bay.

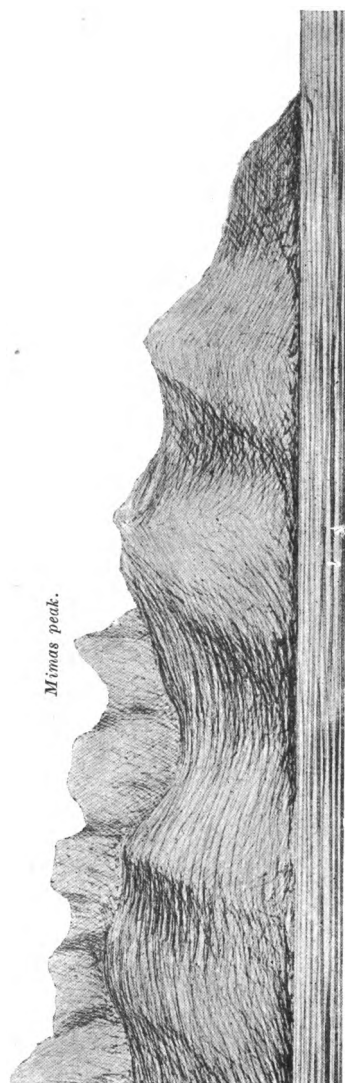
**Light-buoy.**—A light-buoy, cylindrical in shape, with 'frame-work superstructure, painted in black and white horizontal bands, exhibiting a *flashing white* light every five seconds, is moored off Yani Khediz or Pelican spit. Ships should pass south of this buoy.

**Clearing marks.**—The flat hill west of Port Iero (Mityleni), in line with the outer side of Dava burnu,  $334^\circ$  true, or open westward

*General charts 1645, 2836b.*



To face page 419.]



Mimas peak between two northern peaks of Chusan island, bearing  $304^{\circ}$  true, leads south-westward of Kokala burnu and Paleo Khediz spits.

*Chart 1522, Smyrna harbour. Var. 2° 20' W.*

of it, leads westward of the northern portion of the banks extending from the north-east shore of Smyrna gulf, southward of Aggria bay.

Mimas peak seen between the two northern peaks of Chustan island, bearing 304° true, leads south-westward of Kokala burnu and Paleo Khediz spits. *See view opposite.* 5

The north end of Sanjak Kalessi in line with a remarkable sharp hill east of Smyrna, bearing 79° true, leads southward of Yani Khediz or Pelican spit. *See view on chart 1522.*

The large tree, more than the castle's breadth to the northward of the old castle on Mount Pagus, 87° true, also leads southward of Yani Khediz or Pelican spit. *See view D on chart 1645.* 10

**SMYRNA HARBOUR.—North shore.**—This shore, which may be said to commence at Yani Khediz or Pelican spit, partakes to within  $1\frac{3}{4}$  miles of Cordaleo point of the same low marshy broken character as the shore westward of Yani Khediz, being in fact the delta of the River Khediz, several mouths of which formerly debouched into the bay between these points. 15

The irregular and undefined coastline trends in a general north-easterly direction 7 miles, and then with a more defined character, south-eastward, about  $2\frac{1}{2}$  miles to Cordaleo point. In consequence of change in the outlet of Khediz river, the bay thus formed is now occupied by shoal water, with numerous small islands, some covered with rushes, and some composed of bare sand. 20

**Depths.**—Abreast Yeni Khediz spit the depths in mid-channel are from 18 to 21 fathoms, whence they decrease gradually to 6 fathoms at about three-quarters of a mile beyond Sanjak Kalessi; at one-third of a mile further on the depths towards the anchorage increase from  $6\frac{1}{2}$  fathoms to 11 fathoms abreast Kalifatia, whence they again decrease gradually to the head of the harbour, where, at a quarter to half a mile from the shore, the depth is 3 fathoms. 25 30

**Sanjak spit** (*Lat. 38° 26' N., Long. 27° 01' E.*) is the name given to the southern part of an extensive flat in the bay just mentioned, its southern extremity with depths of 3 fathoms bearing 79° true,  $3\frac{2}{10}$  miles from the dry end of Yani Khediz spit. *See views B and C, on chart 1645.* 35

Between Yani Khediz and Sanjak spits, and at nearly equal distances, are the south extremes of two other shoal tongues called Basake and Swan or Khara Chamury spits, the first-named being  $1\frac{1}{2}$  cables, and the last 2 cables, northward of the line joining Yani Khediz and Sanjak spits. 40

**Light-buoy.**—A light-buoy, cylindrical in shape, with framework superstructure, painted in black and white horizontal bands,

*General charts 1645, 2836b.*

*Chart 1522, Smyrna harbour. Var. 2° 20' W.*

exhibiting a *flashing white light every five seconds*, is moored off Sanjak spit.

- 5 This light-buoy is moored  $3\frac{2}{3}$  cables north-north-eastward from Sanjak Kalessi lighthouse, on the opposite side of the channel, which, between the 5-fathoms line, is here limited to a breadth of 3 cables, the depth being 7 to 9 fathoms.

**Caution.**—Discoloured water has been reported to extend about half a cable south-eastward of Sanjak spit light-buoy.

- 10 **Five-fathoms line.**—This contour line in 1890 ran  $76^\circ$  true for one mile from Sanjak spit light-buoy, then follows the turning mark, viz., Mount Sipylus just open eastward of Menimen Skala,  $36^\circ$  true for  $5\frac{1}{2}$  cables, then  $46^\circ$  true for  $7\frac{1}{2}$  cables, whence it trends eastward  $2\frac{1}{2}$  miles to the end of the spit  $2\frac{1}{4}$  cables south of Cordaleo  
15 point.

**Kathura spit** is the name given to the flat eastward of Sanjak spit, northward of the first two trends of the 5-fathoms line just given, and which the turning mark leads south-eastward of.

- 20 **Beacon.**—A black beacon with conical topmark, 14 feet high, stands in a depth of 3 fathoms, one mile north-eastward of the south-eastern edge of Sanjak spit, and about  $6\frac{1}{2}$  cables northward of the projecting elbow of Kathura spit.

- South shore.**—**Sanjak Kalessi**, on the south shore, is nearly  $5\frac{1}{2}$  miles westward of Smyrna inner harbour. It is easily recognised by  
25 Yeni Kale fort, and by the lighthouse.

**Shoal water**, under 5 fathoms, extends three-quarters of a cable from the lighthouse.

- Clearing mark.**—The remarkable sharp peak (eastward of Smyrna), open a little north of Agios Joannis cupola,  $81^\circ$  true, leads  
30 northward of the shoal water extending from Sanjak Kalessi. This mark leads also to the anchorage off the town.

- LIGHT** (*Lat.  $38^\circ 25' N.$ , Long.  $27^\circ 01' E.$* ).—Two lights placed vertically, the upper one being 49 feet above the sea, are shown from an iron staff on a dwelling, 48 feet high, near the extremity of Sanjak  
35 Kalessi.

**Channel.**—**Light-buoys.**—The channel northward of Yeni Kale is now marked by two light-buoys, painted white, each showing a *red flashing light every three seconds*.

Vessels must pass between the light-buoys.

- 40 **Jackal point**, at 2 miles eastward of Sanjak Kalessi, is the end of a narrow spit extending  $6\frac{1}{2}$  cables north-north-westward, the coast-line of the shallow bight between them forming a slight curve; there

*General charts 1645, 2836b.*

*Chart 1522, Smyrna harbour. Var. 2° 20' W.*

are some huts close to the extremity of the point. On the west side of the spit forming Jackal point is a fishery.

**Shoal water** extends from Jackal point a quarter of a mile, but a vessel passes northward of it by keeping Kuklijah cliff, 1,064 feet high (A on chart 1522), just northward of the south end of the barracks, 93° true. The cliff is not easily distinguished, being backed by higher land, which prevents it being seen when the sun is behind it. The barrack is a long white building near the water. 5

**Beacon.**—At  $1\frac{3}{4}$  cables north-north-eastward of Jackal point, in 3 fathoms of water, is a red beacon with spherical topmark. 10

**Keos Tepeh bay** is the name given to an indentation 2 miles broad immediately eastward of Jackal point. The suburb of Kalifatia is situated upon its eastern point.

From Kalifatia the coast, with the suburbs and city of Smyrna, extends north-eastward about 3 miles to Daragaz point. At one mile south-south-westward of Daragaz point is the Port Abri or inner harbour, enclosed by piers and a breakwater, described on page 423. From the point mentioned the coast turns to the east-south-eastward for  $1\frac{1}{4}$  miles, then northward for 2 miles, forming the head of the gulf. It then runs westward and south-westward for  $2\frac{1}{2}$  miles to Cordaleo point, already alluded to. 15 20

**Pilots.**—There is a pilot station in Smyrna. No persons other than those holding a certificate of qualification (written in Turkish, English, French, Greek, and Italian) from the Ottoman State have any authority to practice as pilots. 25

Pilot boats are usually to be found off Yani Khediz (*Lat.* 38° 25' N., *Long.* 26° 57' E.).

**Anchorage.**—The roadstead is capacious, and vessels can anchor as convenient, westward or north-westward of the breakwater of the Port Abri or inner harbour. 30

A good berth can be taken up in 8 to 10 fathoms from half to three-quarters of a mile westward of the north end of the breakwater. Vessels are not allowed to anchor eastward of a line running 356° true from the north end of the breakwater. Merchant steamers generally go into the inner harbour, where cargoes can be discharged and shipped alongside the wharf, where there is every convenience. The harbour fees are fairly heavy; vessels of war are free from charge. 35

*Chart 1645, Island of Khios and Gulf of Smyrna.*

**DIRECTIONS.**—There is no difficulty in the navigation of Smyrna gulf, the leading marks being clearly distinguishable. Sailing-vessels generally enter with a fair wind, and should endeavour to be at the entrance before noon so as to get the first of the sea breeze, 40

*General charts 1645, 2836b.*



*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 30' W.*

which, if strong, will carry them to the anchorage. It is advisable to keep along the eastern side of Chustan or Long island at the distance of one or  $1\frac{1}{2}$  miles, and when abreast of Kilsali island, to steer for the  
 5 Brothers (*see* page 414), and keep close along the southern shore, which is all steep-to.

To pass westward of the shoal water bordering the low shore on the eastern side of the entrance to the gulf, keep the flat hill westward of Port Iero in Mityleni,  $334^\circ$  true, on with the outer side of Dava burnu  
 10 or open westward of it. The flat hill in line with the headland leads over the Merminji rocks. Should the wind be from south-west, do not keep away too soon after passing Chustan island, as it will draw off the hills from south, and from south-east, on nearing Sanjak Kalessi.

15 The peak of Mimas (*Lat.*  $38^\circ 39'$  N., *Long.*  $26^\circ 30'$  E.) seen between the two northern peaks of Chustan island bearing  $304^\circ$  true (view at page 419), leads southward of Kokala burnu and Paleo Khediz spits; in approaching Yani Khediz or Pelican spit, which will probably be known by the discoloured water, the light-buoy will be the best  
 20 guide, but a remarkable sharp hill eastward of the city of Smyrna in line with the northern end of Sanjak Kalessi,  $79^\circ$  true, leads southward of the spit. *See* view A on chart 1522, and also page 419.

*Chart 1522, Smyrna harbour.*

When about a mile eastward of Pelican spit light-buoy, edge to the  
 25 northward, and steer to pass between the white painted light-buoys off Sanjak Kalessi.

A vessel standing towards the flats extending from the north shore should keep Mount Sipylus (which has a black appearance, from the trees on its summit) open eastward of Menimen skala, bearing  $36^\circ$   
 30 true, but should not stand further northward than a distance of three-quarters of a mile north-eastward from the south-east extreme of Kathura spit. The best time for leaving Smyrna in a sailing vessel is with the first of the land wind, about one o'clock in the morning.

*Chart 1645, Island of Khios and Gulf of Smyrna.*

35 **At night.**—In entering the gulf at night, the position of a vessel will be known by the bearings of Oglak and Merminji lights; a mid-channel course (about  $154^\circ$  true) should be preserved, and in proceeding to the southward, Cape Merminji *red* light should not be brought westward of a  $351^\circ$  true bearing until 6 or 7 miles southward of it,  
 40 so as to avoid the shoal water bordering the low eastern shore. When at the above distance from the light, a vessel may edge a little to the eastward, but Cape Merminji *red* light should not be brought westward of  $344^\circ$  true. When the Yani Khediz or Pelican spit light-buoy

*General charts 1645, 2836b.*

*Chart 1645, Island of Khios and Gulf of Smyrna. Var. 2° 20' W.*

bears about 115° true, it will be nearly in line with Paleo Khediz spit, and by bringing the light-buoy to bear northward of 86° true, Paleo Khediz spit will be passed at the distance of half a mile.

Pelican spit light-buoy should be passed at the distance of a quarter of a mile, with Sanjak Kalessi lights bearing 78° true. When about a mile to the eastward of Pelican spit light-buoy, edge to the northward, and steer midway between the white painted light-buoys off Sanjak Kalessi, when, after passing the spit off Jackal point, course may be shaped for the anchorage, westward or north-westward of the breakwater, as before stated.

*Plan of Smyrna on chart 1522.*

**PORT ABRI** (*Lat. 38° 26' N., Long. 27° 08' E.*).—In front of the city is a well constructed embankment of blocks of concrete, 1½ miles in length, and 60 feet wide, along the sea face of which there are from 1½ to 4¾ fathoms water. At the south end, near St. Peter's castle, the Custom-house pier, about 230 yards in length, projects north-westward, between which and the south-eastern angle of the coal depôt on the breakwater is a passage 130 feet wide and 6 fathoms deep as charted; from the north end of the coal depôt, which is about 95 yards long, the breakwater extends in a northerly direction about 450 yards, and east-north-eastward 200 yards. From the corner of the embankment abreast the north extreme of the breakwater a pier, 160 yards long, extends towards the latter, leaving a passage between them about 85 yards broad and 5¾ fathoms deep. This is the north entrance of Port Abri, which has an area of about 40 acres, and depth, generally, of 5½ to 6¾ fathoms; there is a depth of 3¾ to 4¾ fathoms alongside the quays. From the south end of the coal depôt an arm extends in a south-south-westerly direction 330 yards.

**Men-of-war.**—The usual berth in the Port Abri for men-of-war is under the north pier, on the inner portion of which stand the Port and Health offices. Vessels lie parallel to this pier, with anchors ahead, and stern hawsers to the quay.

The depth in the south entrance is about 22 feet; some mail-steamers use it, and at their own risk, as the port authorities do not guarantee this depth.

**Caution.**—Entering the Port Abri by the south entrance, the south-west extremity of the breakwater must not be rounded too closely, on account of some submerged steps.

**Lights.**—The northern entrance to the Port Abri is marked by an occasional light on each side, shown from wooden posts. These lights are only shown when mail steamers are expected.

*General charts 1522, 1645, 2836b.*

*Plan of Smyrna on chart 1522. Var. 2° 20' W.*

**Regulations.**—To enter the Port Abri, permission has to be obtained from the Port Authorities. When granted, an officer is sent on board to berth the ship and a green flag is hoisted. A red flag is  
5 hoisted when a vessel is going out.

A vessel from sea wishing to enter stops at a good distance from the north entrance for the visit of the health officer. It is necessary to send on shore for pratique, and until this is granted, a red flag is hoisted at the west side of the entrance. As soon as pratique is  
10 given, a green flag is hoisted and the vessel can enter. An official proceeds in a boat carrying a blue flag with white anchor to the point where the vessel should drop her anchor. Before leaving, give a blast on the whistle and wait until the red flag is hoisted.

Before scraping a ship's bottom, permission must be obtained from  
15 the Port office.

*Charts 1522, 1645.*

**Tides.**—The tides and currents are irregular. At full and change, it is high water on the shore, in Khios strait, at 2h.; at Chustan island, IIIh.; at Smyrna, Vh. 30m., and sometimes IVh.; this is owing  
20 to the sea breeze, which at times impels the current and increases its height. At Smyrna the sea level rises with a southerly wind and falls with a northerly; the level varies 3 or 3½ feet, but at Khios and places adjacent only 2 feet. See also page 17.

*Chart 1522, Smyrna harbour.*

**Piers.**—On the west side of Daragaz point (*Lat. 38° 27' N., Long. 27° 09' E.*) is a small pier belonging to the Smyrna Steam Flour Mills; and on the north side the pier of the Smyrna-Aidin Railway, 600 yards long, with an arm 200 yards long, having a depth of 28 feet at its end. Vessels drawing 24 feet load alongside the arm  
30 of the latter pier.

*Plan of Smyrna on chart 1522.*

**SMYRNA** (*Lat. 38° 26' N., Long. 27° 09' E.*).—The city of Smyrna (called by the Turks *Ismir*), on the south side of the harbour, near the head, is built at the foot of Mount Pagus, on the summit of  
35 which are the walls of a ruined castle. Like most Turkish towns, it has an agreeable appearance from seaward, and contains some well-built houses, which belong principally to foreign merchants. The houses are chiefly of wood, with brown roofs without chimneys, but those belonging to the Christians are distinguished from those of the Turks by being  
40 built of stone, and the eaves of many of them almost meet across the street, which are narrow and dirty. The warehouses on the marina are whitewashed, and no house in the town is above one storey high.

The Frank and Greek quarter extends along the shore, and contains many shops, warehouses, and coffee houses. The Armenians occupy a

*General charts 1522, 1645, 2836b.*

*Plan of Smyrna on chart 1522. Var. 2° 20' W.*

more elevated position. The Turkish quarter comprises the whole of the upper part of the city and the western side of the hill. The Jewish quarter is between the Turkish and Armenian quarters. In a magnificent casino, built by subscription, are all the principal periodical publications of Europe. Among the many public buildings there is a Greek college and a theatre. In the evenings thousands of well-dressed people promenade the marina, listening to the bands, &c.

The suburbs have extended greatly during the last few years, the houses now fronting the shore to the south-westward as far as Kalifatia, and tramcars run from the railway station at Daragaz point along the shore as far as Keos Tepeli, a village about a mile westward of Kalifatia.

To its position Smyrna owes the rank it holds among the most important trading places in the world. The extent and safety of its roadstead, and the facility of its communications with the interior, have made it the general emporium of the Levant.

In the immediate neighbourhood are the pretty villages of Bournabat, Bujah, and Sedikioi, where the country seats of the consuls and merchants are situated.

On the northern shore of the harbour a large village has lately sprung up named Cordaleo. It is considered a healthy resort, and much frequented by the inhabitants of Smyrna; there are several landing piers, some bath-houses, and a marine promenade.

**Population.**—The city of Smyrna is thickly inhabited, and was reported to contain in 1913 a population of about 350,000, of which, in 1907, 145,000 were Greeks. Each nation is exempt from Turkish rule, and protected by its own Consul. The vilayet of Smyrna was reported to contain about 2,500,000 inhabitants in 1913.

**Trade** (*Lat. 38° 26' N., Long. 27° 09' E.*).—The imports consist of alcohol, cotton and manufactured goods, leather, hides, iron, coal, coffee, sugar, petroleum, hardware, rice, silk, timber, &c. The principal exports are dried fruits, valonia, grain, wool, cotton, carpets, skins, opium, olive oil, tobacco, liquorice, and emery.

**Quarantine.**—Vessels arriving with a foul bill of health, or unprovided with a bill of health, are subject to quarantine, which is performed at Vourlah. Passengers are disembarked at the lazaretto on Clazomenæ islet. See page 412.

**Climate.**—The summer heat is very great, but is generally tempered by a fine westerly breeze named the “*imbat*,” which continues from about 10 a.m. till sunset. Occasionally, however, hot winds blow from the south and parch the country; persons should avoid sleeping on deck if the season is unhealthy, especially during a gentle breeze off the shore.

The prevailing diseases are bronchitis, fever, ague, and diphtheria.

*General charts 1522, 1645, 2836b.*

*Plan of Smyrna on chart 1522. Var. 2° 20' W.*

**Winds.**—The predominant winds are from North to East, the greatest force being from N.N.E. The sea breezes may be expected from May to September, alternating with the land wind at night.  
 5 Winds from West to North are light, and it frequently happens that while a westerly wind is blowing at about 10 miles westward an easterly wind prevails at the anchorage, with a calm between. Once every two or three years a heavy gale occurs, but lasts only a few hours. *See* also pages 12, 13.

10 For result of observations at Smyrna, extending over several years, *see* Meteorological Table, Appendix III., page 504.

**Seamen's hospital.**—British vessels pay 1½ pence per ton for the support of the seamen's hospital, and their sick are admitted free of expense; other British subjects, and foreigners, are admitted on the  
 15 payment of 3s. 6d. per diem. There is also a seamen's rest or coffee house.

**Repairs** (*Lat. 38° 26' N., Long. 27° 09' E.*).—There is every facility for repairs of ships and machinery. There is a 10-ton steam hammer, and castings can be made up to 2 tons. The Smyrna and  
 20 Aidin Railway Company, at their wharf, have a crane capable of lifting 10 tons. Thirty-inch cylinders can be cast and bored.

There are three small patent slips. *See* Appendix I., page 498.

**Coal.**—There is every facility for coaling at Smyrna, the best Cardiff being obtainable, of which about 5,000 tons were in stock in  
 25 1914, besides 3,000 tons of Turkish coal, from private firms. About 32,000 tons of coal are imported annually. About 300 tons can be loaded in 24 hours. The coal wharf is 300 feet long, with a depth of 24 feet alongside. There are from 175 to 200 lighters of from 50 to 175 tons. To ships not in the inner harbour strong winds, which occa-  
 30 sionally blow, stop all communication with the shore, and coaling is then difficult.

In recent years considerable preference has been shown for Turkish coal, *i.e.*, coal from the mines of Heraclea and district, of which 77,440 tons were imported in 1908, as compared with 45,805 in 1906. Cheap-  
 35 ness principally accounts for the preference shown to the native fuel, but the quality of the coal has steadily and greatly improved of late years.

**Supplies** are plentiful and prices moderate. A regular contractor supplies His Majesty's ships with coal, provisions, &c.

40 **Water.**—The facilities for watering at Smyrna are very good; there are several tank vessels carrying from 10 to 15 tons each, constantly employed, and, as they obtain their supply from an artesian well near the Health office, vessels are quickly supplied with the quantity required. Vessels are also supplied by hose on the quay. Water

*General charts 1522, 1645, 2836b.*

*Plan of Smyrna on chart 1522. Var. 2° 20' W.*

is also brought into Smyrna from Paradise by aqueducts and distributed by leaden pipes.

Good water can also be obtained from an outlet near the Smyrna-Kassala Railway Co.'s pier. 5

*Chart 1522, Smyrna harbour.*

**Railways.**—The Smyrna and Aidin line of railway runs from the station near Daragaz point to Turbali, Ephesus, Aidin, Serakioi, Dinair, Chevril, and Egerdir, the whole distance being about 300 statute miles. From Turbali a branch runs to Tireh and Udemis. 10 The same company also works the Smyrna suburban lines to Bujah and Sedikioi.

The Smyrna and Kassaba railway runs to Manissa, Kassaba, Alascheir (Philadelphia), and Afiun kara Hissar, a distance of about 300 miles. From Manissa a branch goes to Ak-hissar (Thyatira), Soma, 15 Balikesri, and Panderma, on the south shore of the Sea of Marmara. From Afiun kara Hissar a branch runs to Eskishehr, connecting with the main line from Constantinople and Ismid to Angora and Cherekli. This same company also work the Smyrna suburban line to Bournabat 20 (*Lat. 38° 28' N., Long. 27° 14' E.*). The railway station of this company is near the centre of Smyrna. See also paragraph on railway communication, page 8.

**Telegraph.**—There is telegraph communication with Constantinople, Malta, Alexandria, Cyprus, and consequently with all parts of the civilised world, including the principal islands of the archipelago. 25

The telegraph office is open always.

See also paragraph on telegraphic communication, page 18.

*General charts 1645, 2836b.*

## CHAPTER IX.

THE COAST OF TURKEY IN ASIA AND IN EUROPE, AND OF BULGARIA, FROM CAPE HYDRA OR ASLAM BURNU, TO THE KARA SU RIVER, WITH THE ADJACENT SPORADES ISLANDS.

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VARIATION decreasing about 9' annually.

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*Chart 1902, The Gulf of Sandarli. Var. 2° 20' W.*

**The GULF of SANDARLI or CHANDARLI** (ancient *Cumæus Sinus*) extends eastward upwards of 13 miles from the line joining Cape Hydra (*Lat. 38° 45' N., Long. 26° 45' E.*) on the south  
 5 and Cape Mal-tepeh on the north, which are nearly 13 miles apart. Its shores are irregular, broken by bays and indentations and bold headlands, with low marshy ground. The town from which the gulf derives its name is on a peninsula on the northern shore.

The gulf is liable to strong and sudden changes of wind. The most  
 10 prevalent are the "meltems" or northerly winds, which come on suddenly and blow hard, but generally give warning, as previous to these gales the summit of Mount Karadagh on the north shore is covered with dense masses of vapour. At other times during the summer months the sea and land breezes are tolerably regular.

15 **Cape Chemali or Sekertzek.**—Between Cape Hydra (page 414) and Cape Chemali, nearly 4 miles east-north-eastward, the coast is bold, irregular, and steep-to. At nearly one mile from Cape Hydra, and close inshore, is the little Sera nisi, and between it and the shore are sunken rocks; at two-thirds of a mile eastward of the  
 20 islet is Chanakia liman, an inlet about three-quarters of a mile deep and a quarter of a mile wide, with from 22 fathoms water at the entrance to 2 fathoms near the head, and open to the north-eastward. Shoal water extends a cable northward from Cape Chemali, and about 1½ miles south-eastward of it is the bay of Foggia Nova.

25 *Chart 1902 and plan on chart 2836b.*

**Foggia Nova** (*Lat. 38° 45' N., Long. 26° 51' E.*).—The bay of Foggia Nova or Naes Foyes is about 6 cables deep, and nearly the same in breadth, though its entrance is narrowed to about 4 cables by the shoal described below.

30 **Shoal.**—A shoal named Xero Punda, with only one foot of water on it, lies about 2 cables north-eastward of the west entrance point,

*General charts 1645, 1665, 2836b.*

*Chart 1902, and plan on chart 2836b. Var. 2° 20' W.*

and thence to Aspro Kavo at two-thirds of a mile north-westward of the point the coast is fronted by shoal water, which also borders the shore of Foggia Nova bay all round, to a distance of from one to 2 cables.

5

The bay is open to the northward, but, as there is not much fetch and the holding ground good, there is no danger in anchoring here. When entering keep at a moderate distance from the eastern shore, and anchor in 8 or 9 fathoms water, about 4 cables from the town at the head of the bay, bottom mud and weed.

10

**Supplies.**—Small quantities of water and refreshments may be procured.

*Chart 1902, The Gulf of Sandarli.*

**Namurt liman.**—At nearly 5 miles north-eastward of Cape Chemali is Cape Utch-keucheh or Leja burnu, the termination of a bold cliffy tongue of land with a sunken rock off it, which is steep-to; the cape should be given a berth of 2 cables. Between the two capes the coast forms a deep bight, at the head of which a projecting point, named Karaja Dagan burnu, with three little islets or rocks on its western side connected to the shore by shallow ground, separates two bays, that to the north-eastward being Namurt liman. The shore of this bay is bordered all round by shallow water and rocks to a distance of about 2 cables, outside which the depths are from 6 to 16 fathoms, mud bottom in the middle, and within the shore at its head is a farm and the ruins of ancient *Cyme*.

15

20

25

*Plan 515, Port Ali-Agha.*

**PORT ALI-AGHA.**—The coast from Cape Utch-keucheh to Tasli burnu,  $2\frac{1}{2}$  miles east-north-eastward, is irregular, of cliff and beach, and bordered by shallow water and rocks.

Port Ali-aghah is nearly circular,  $1\frac{2}{3}$  miles in diameter, open to the north, with an entrance two-thirds of a mile wide. The southern and eastern shores are bordered by shallow water, and at the head of the port the 3-fathoms patches extend off more than half a mile, but the anchorage is spacious, in from 14 to 5 fathoms water, sand and mud, and good holding ground. There is no fresh water, and nothing in the shape of supplies can be obtained. See views on plan 515 and chart 1902.

30

35

**Tasli burnu** (*Lat. 38° 50' N., Long. 26° 57' E.*), on the western side of entrance to Port Ali-aghah, is a sharp projecting rocky point with shoal water around it to a distance of  $1\frac{1}{4}$  cables.

40

**Tuzla burnu**, the eastern entrance point, is low and marshy with salt pans and a fishery backwater, and is also bordered by shallow water.

*General charts 1645, 1665, 2836b.*



*Plan 515, Port Ali-Agha. Var. 2° 20' W.*

**Agios Ioannis islet**, surrounded by shallow sunken rocks, lies in the south-west corner of the port, and on it is a conspicuous house.

*Chart 1902, The Gulf of Sandarli.*

- 5 **Coast.**—The coast between Ali-agma and Bektasat Sakan, about 1 miles north-eastward of the former, is irregular and skirted by rocks which extend off shore to a distance of  $1\frac{1}{2}$  cables in places; at a mile from Tuzla burnu is the outlet of the Guzel Assar chai, on the west side of Mount Deirmi, from the base of which and the delta of the  
10 river shoal ground extends northward nearly a quarter of a mile, and is steep-to. Mount Deirmi is a remarkable conical hill close to the sea. *See view on chart 1902.*

- Bektasat Sakan**, also called Port Glymi, is a large expanse of water extending over a space of  $2\frac{1}{2}$  miles north-east and south-west,  
15 by  $1\frac{1}{4}$  miles. The greater portion of it is shallow and under a depth of 3 fathoms, but the central part is  $3\frac{1}{2}$  to 4 fathoms deep. The shallow water extends across the entrance from point to point which are  $1\frac{1}{2}$  miles apart, and between them are the two little Sakran Adalari islets united by a reef; north-eastward of the islets, the depth  
20 over the shallow ground is only 3 feet. The deepest water into the port is about  $1\frac{1}{4}$  fathoms, nearly midway between the south-western point and the islets.

*Chart 1902, and plan on 2836b.*

- Rema bay.**—This bay is in the north-eastern corner of the gulf,  
25 and the inner part of it is very shallow. The anchorage for small vessels is south-west of the Custom house pier, in 5 or 6 fathoms, mud. Elæa, the ancient port of *Pergamos*, within the head of the bay, was once a port of considerable importance, but now, owing to the recession of the sea, it cannot be approached. Among the ruins  
30 scattered about are the remains of an ancient mole. The bay abounds in flat fish, and particularly stingrays, which are dangerous to handle, and inflict most painful wounds, difficult to cure. Mount Sakarkeya, on the eastern side of the bay, is 1,240 feet high.

- Sandarli** (*Lat. 38° 56' N., Long. 26° 57' E.*).—Between Rema  
35 bay and Sandarli harbour, nearly 5 miles westward, the coast is low, flat, marshy, and bordered by shallow water to a distance of a quarter of a mile. The Bakir chai (ancient *Kaikos*) runs into the sea about 2 miles east of Sandarli. Sandarli or Chandarli harbour is a little bay 10 to 6 fathoms deep, on the eastern side of a tongue of  
40 land on which is situated the town of Sandarli. Eski adasi, lies in the entrance of the harbour, and should be left on the star-board hand in entering; the eastern passage is narrow and only  $5\frac{1}{4}$  fathoms deep. A bank, with  $1\frac{1}{2}$  fathoms on it, extends northward

*General charts 1645, 1665, 2836b.*

*Chart 1902, and plan on 2836b. Var. 2° 20' W.*

about half a cable from the west end of Eski adasi. There is nothing to be obtained here.

*Chart 1902, The Gulf of Sandarli.*

**Plati and Adelphi islets.**—In the entrance to the gulf are five small barren islets, which, with the exception of the Adelphi, are steep-to. Plati, the southernmost, is half a mile in extent, and lies about  $1\frac{1}{2}$  miles northward of Cape Utch-keucheh; Mikra, very small, is about  $4\frac{1}{2}$  cables northward, and Prassa adasi, 3 cables long, is about 6 cables north-eastward of Plati. The Adelphi or Ikizler, the two northernmost islets, lie  $1\frac{1}{2}$  miles north-north-eastward of Prassa adasi, and 2 miles from the northern shore of the gulf; they are close together and situated on a rocky shoal, which extends a quarter of a mile westward, where there are 4 fathoms water; the north-eastern islet is steep-to, except the western end.

**Coast.**—From Sandarli to Chinarli or Dermen burnu a distance of 4 miles, the coast is broken and irregular, but shoal water nowhere extends more than 2 cables from the shore. Chinarli burnu is also bordered by a shallow bank, which is steep-to. The coast of Chinarin burnu, 2 miles to the north-westward, is skirted by rocks and shallow water, extending off nearly 2 cables.

**Agios Georgios islands.**—These four islands or islets, the largest being rather more than one mile in length in a north-westerly and south-easterly direction, front the coast from Chinarli burnu north-westward towards Cape Mal-tepeh. Kormen adasi, the southern islet, is wedge-shaped with the thick end to the southward, and 40 fathoms water close to it, but a depth of 4 fathoms extends about 2 cables to the westward of the north point.

Tzorzi Kalessi (*Lat. 38° 55' N., Long. 26° 50' W.*), the next and largest,  $5\frac{1}{2}$  cables from the first, has a conspicuous old tower on it; on its western side is a bay with a little islet connected with the shore by shoal ground, and rocks skirt the shore north of the bay. A shoal with  $2\frac{3}{4}$  fathoms water on it extends off a cable, a little westward of its north-eastern point, which is rounded and cliffy.

Eki Kardarslar, the two northern islets, lie about 4 cables northward of Tzorzi Kalessi, and are small and close together, with shoal water around them, between which and the shallow water off Chinarin burnu the passage is about one-third of a mile wide, with deep water. The Agios Georgios islands extend over a distance of  $2\frac{3}{4}$  miles, with deep water midway in the channels between them.

**Cape Mal-tepeh** (ancient *Cana* prom.), about  $3\frac{1}{2}$  miles north-westward of Chinarli burnu, is a bold headland, and the western termination of Mount Karadagh, which is about 3 miles inland, and

*General charts 1645, 1665, 2836b.*

*Chart 1902, The Gulf of Sandarli. Var. 2° 30' W.*

2,560 feet high. The cape is skirted by rocks to a short distance seaward. For continuation of this coast, *see* page 443.

*Chart 1665, Mityleni island, &c.*

- 5 **MITYLENI** (pronounced Mitilini), the ancient *Lesbos*.—This island is 39 miles in length in a west-north-west and east-south-east direction, and  $24\frac{1}{2}$  miles nearly in extreme breadth. It is mountainous throughout, and some of the hills are well wooded. The greatest elevations are Mount Olympus, 3,080 feet above the sea, in the south-eastern part; Mount Lepethymnus, 2,752 feet high, in the northern part; and Mount Ordymnos, 1,780 feet high, near the west end.

- The island is considered very healthy, the only exception being during the autumn, in the marshy districts north-westward of Port Iero, and north of Port Kalloni, at which season malarial fever is prevalent.

**Population.—Trade.**—By the census of 1913, Mityleni had a population of 182,167. The trade products consisted of olive oil, soap, gums, sponges, oranges and lemons, cereals, hides, and skins.

- 20 **Rainfall.**—The rainfall during the year 1912 averaged 29.02 inches.

*Chart 1664, Port Iero or Olivieri.*

- 25 **Cape Zeitin** (ancient *Malea*), the south-eastern extreme of Mityleni island, is distant  $9\frac{2}{3}$  miles west-north-westward from Cape Maltepeh on the mainland. The coast in the vicinity is bold, but a spit, with 3 fathoms water on it, extends  $1\frac{1}{2}$  cables south-eastward from the shore close to the cape, and should be given a wide berth.

- A large rock rises from the spit close in, and  $6\frac{1}{2}$  cables westward of it is another named Simblo or Beehive. The entrance to Port Iero is about  $2\frac{1}{2}$  miles westward of the cape, and will easily be recognised. See views on charts 1664, 1665.

- PORT IERO or OLIVIERI** (*Lat. 39°05' N., Long. 26°30' E.*) is a fine land-locked basin of water, 4 miles long in a north-north-west and south-south-east direction,  $2\frac{1}{2}$  miles broad, with depths of 7 to 10 fathoms, mud bottom, and affords well-sheltered accommodation, with good holding ground, for a considerable number of large vessels. It is surrounded by hills covered with olive trees, and backed by mountainous land.

- 40 The entrance to the port is through a narrow channel with depths of from  $4\frac{3}{4}$  to 17 fathoms, about  $3\frac{1}{2}$  miles long, in some parts less than one cable broad, and at the north end its width between the 5-fathoms lines is not more than half a cable; the outer entrance of this channel, which is about 3 cables wide, may be recognised from seaward by

*General charts 1665, 2836b.*

*Chart 166½, Port Iero or Olivieri. Var. 2° 30' W.*

White Crag hill, 60 feet high (on the west side of the channel), with a white house a short distance south-west of it, and by Prophylaki islet to the southward.

*Plan of entrance to Port Iero or Olivieri on 166½.*

5

**Foul point**, on the south side of the outer entrance, has a detached cliff near its extreme point, by which it may be distinguished, and terminates in a shingle beach, with a reef extending three-quarters of a cable in a northerly direction. On the north-east side of the reef depths of 4 fathoms extend one-third of a cable, or to one cable from the end of the beach. 10

**Buoy**.—A red mooring buoy, marked “Foul point,” is moored off the north-east side of the reef extending from Foul point.

**Mid rock**, about 2½ cables northward of Foul point, is small and black, with a smooth top, and 6 feet high; it is not easy to recognise from seaward, being the same colour as the background. 15

**Reef rock**, 15 feet high, and of a light brown colour, lies on the extremity of a narrow spit extending nearly 2 cables in an east-south-easterly direction from the point at the foot of White Crag hill. See view on chart 1664. 20

**Square rock** (*Lat. 39° 01' N., Long. 26° 33' E.*), on the western side of the channel, half a mile northward of Reef rock, has a one-fathom spit extending from its south-eastern side. At the extremity of this spit, distant 75 yards south-eastward from the rock, there is a depth of 3½ fathoms, with 8 fathoms close to. 25

**A rocky ledge** extends 50 yards from the point on the east side of the channel, 2 cables northward of Reef rock. A white house near the east shore, 6 cables northward of Square rock, touching the east side of Square rock, 342° true, leads close outside this ledge.

**The channel** in this part is also contracted by a bank that extends some distance from the point about 1½ cables northward of the rocky ledge just mentioned, and also from the point on the shore north-eastward of Square rock. 30

At 5½ cables northward of Square rock, on the eastern side of the channel, the coast forms a bight, 2 cables in length east and west, at the eastern end of which are two mooring buoys in shoal water near the shore. The white house forming a mark for clearing the rocky ledge, mentioned above, is at the western end of this bight. 35

Northward of Square rock the channel widens, and is fairly straight for a distance of 1¾ miles to abreast Perama, on the western side of the channel. Off Perama, and in the bay opposite, there is sufficient space and depth for several vessels of the heaviest draught to moor. 40

There is a pier at Perama, also two others situated about 1¾ cables southward and one cable north-westward of Perama.

*General charts 1665, 2836b.*

*Plan of entrance to Port Iero or Olivieri on 1664. Var. 2° 30' W.*

From Perama into Port Iero the deep-water channel, in which there are depths of  $4\frac{3}{4}$  to 8 fathoms, lies near the eastern shore; the narrowest part of this channel is only half a cable broad.

- 5 A long continuation of southerly winds is said to increase the depth of water from one to 2 feet, and northerly winds to decrease the depth the same amount.

**Caution.**—No vessel drawing more than 24 feet water should attempt this passage without previously sounding and buoying it.

- 10 At  $3\frac{1}{2}$  cables north-westward of Perama there is a tannery with flagstaff, also a disused windmill. There are two piers on the western shore of the channel, one opposite the tannery and the other about a quarter of a mile north-westward of it.

- Directions.**—In fine weather and during daylight, steam vessels  
15 may steer with confidence for Port Iero. White Crag hill and Prophylaki islet cannot be mistaken; Reef rock will also show as the entrance is neared.

- White Crag hill, bearing  $294^\circ$  true, and just open north of Reef rock, leads in 17 to 19 fathoms between Mid rock and the reef extending from Foul point (*Lat.  $39^\circ 00' N.$ , Long.  $26^\circ 34' E.$* ).

- After passing Mid rock, open Reef rock on the port bow, and steer in mid-channel, altering course gradually to the northward until Square rock opens on the port bow. At  $3\frac{1}{2}$  cables northward of the white house in the bay, 6 cables northward of Square rock (already  
25 mentioned), is a hill, the centre of the summit of which, bearing  $340^\circ$  true, and open eastward of the house, leads eastward of the spit extending from Square rock; the channel north-eastward of the rock is about three-quarters of a cable wide.

- After rounding Square rock keep in mid-channel as far as Perama.  
30 The narrow channel northward of this village should not be attempted in a large vessel without local knowledge, or without being buoyed.

Sidero island, 35 feet high, which lies about three-quarters of a cable from the eastern point of the north-western entrance of this channel, may be passed at a distance of half a cable to the westward.

- 35 *Chart 1664, Port Iero or Olivieri.*

**Anchorage.**—After passing Sidero island, anchorage may be obtained in any convenient depth over a mud bottom in all parts of the bay, but care should be taken to anchor well clear of the approach to the passage.

- 40 The best anchorage is in the northern part of the bay, about three-quarters of a mile south of the bath houses (*Lat.  $39^\circ 07' N.$ , Long.  $26^\circ 30' E.$* ), in 7 fathoms of water, mud.

- Caution.**—Vessels cannot enter or leave Port Iero at night, or in thick weather with safety; it would also be hazardous for vessels of  
45 heavy draught to attempt to enter the port in a southerly gale.

*General charts 1665, 2836b.*

*Chart 1664, Port Iero or Olivieri. Var. 2° 30' W.*

**Telegraph.**—There is a good road from Port Iero to the town of Mityleni, a distance of  $2\frac{1}{2}$  miles, whence telegrams may be sent to any part of the world.

**Water.**—There are several streams running into Port Iero, from which fresh water can be obtained, but, as they nearly all run through marshes, it would not be advisable to use the water except for cooking or washing. A specimen of water obtained from the clearest stream was analysed in the summer of 1877, and found to be sufficiently pure and safe for all domestic purposes; some water from a warm spring was also analysed, but was not deemed fit for drinking or culinary purposes.

**Supplies.**—There are some small villages near the shores of Port Iero, where supplies of beef, vegetables, and bread of good quality can be obtained.

**Coast.**—The little islet of Prophylaki lies 6 cables from the shore on the western side of entrance to Port Iero, and has deep water all round it.

*Chart 1665, Mityleni island, &c.*

At  $1\frac{1}{4}$  miles westward of Prophylaki is a small bay named Petras, with two little islets in front of it. From Petras bay the south coast of Mityleni trends westward  $5\frac{1}{2}$  miles to Meriko point, and then more northerly for 11 miles to Cape Vurkos. Meriko point is slightly salient, and the shore east and west of it is bordered by shallow water to a distance of about a quarter of a mile.

Potamos or Millda point (*Lat. 38°59' N., Long. 26°20' E.*),  $3\frac{1}{2}$  miles westward of Meriko point, has some rocks at its base above water, and a bank extending off nearly 2 cables; between Potamos point and Cape Vurkos the shore is also bordered by shallow ground.

**Telegraph.**—At  $1\frac{1}{2}$  miles to the westward of Meriko point is the village of Potamos, from which a road about  $1\frac{3}{4}$  miles long leads to the village of Plumari, a telegraph station.

**Cape Vurkos** is a projecting point, and at a third of a mile within its extremity is a church; close to is a rock above water. Falcon rock, with less than 6 feet of water on it, lies half a mile south-eastward of the cape, and is the outermost of a chain of sunken rocks which extend northward to the shore. These dangers are steep-to, and the cape should be given a wide berth.

**Khoklakari bay**, on the eastern side of Cape Vurkos, affords temporary anchorage during off-shore winds, but it is exposed to the southward, and winds from that quarter send in a heavy sea.

*General charts 1665, 2836b.*

*Plan of entrance to Port Kalloni on chart 1665. Var. 2° 40' W.*

**PORT KALLONI.**—The entrance to this port is 6 miles north-westward of Cape Vurkos. The port is a beautiful sheet of water, extending into the island  $11\frac{1}{2}$  miles in a north-easterly direction, and  
5 in the inner part 4 miles wide, with from 10 to 4 fathoms water, muddy bottom. On the eastern side of the entrance is a cliffy cape and an islet, both named Kalloni, with a passage a little more than half a cable wide, and 3 fathoms deep between the banks bordering the two.

The ship passage north-westward of Kalloni or Garbia islet is  
10 contracted by an extensive rocky bank named Plati, stretching from the western shore and covering the entrance of the port, but leaving a narrow channel half a mile in length, and about 70 yards wide, in which the depths are from  $9\frac{1}{2}$  to 23 fathoms water.

Off Hook point on the south side of the channel, rocks which show  
15 above water extend for 30 yards, and shoal water of less than 3 fathoms extends for about 50 yards; this is at the narrowest part of the channel.

Within the Plati bank is a large open space called Agia Pande-  
mona (Agia Pandlemon) bay; it is about a mile in length, 10 to  
14 fathoms deep, with Erimo-nisi, entirely surrounded by shoal water,  
20 in the northern part. The passage or inner entrance,  $1\frac{3}{4}$  cables wide, into Port Kalloni, is at the eastern end of the bay, and between the spits extending from the points on either side there are from 10 to 15 fathoms water. The port is frequented by coasters. It is subject to heavy squalls from the high land surrounding it.

25 Anchorage for small vessels may be obtained in Apothero (Apotheka) bay, about 2 cables northward of Erimo nisi (*Lat. 39° 08' N., Long. 26° 07' E.*); Apotheka village consists of a few houses and has three stone piers and a Custom house.

**Supplies.**—Good beef and vegetables at moderate rates can be  
30 obtained; but no bread.

*Chart 1665, Mityleni island, &c.*

**Rock.**—At  $7\frac{1}{2}$  cables, 205° true, from the southern extremity of Kukuma point, west side of Port Kalloni, and  $2\frac{1}{4}$  cables from the shore, is a rock with 6 feet of water on it.

35 For additional information on Port Kalloni, *see* Appendix V., page 509.

**Coast.**—From Port Kalloni the coast trends westward  $5\frac{3}{4}$  miles to Cape Brisa, a prominent cliffy point with shallow ground around, and a rock above water off it; at half a mile eastward of the cape  
40 is a reef of sunken rocks nearly a quarter of a mile from the shore. These dangers are steep-to, and the cape should be given a wide berth. From Cape Brisa the coast trends north-westward  $7\frac{3}{4}$  miles to Cape Sigri, the western extreme of Mityleni; it is throughout irregular, cliffy, with some beaches, backed by high land, and has deep water  
45 at a quarter of a mile off.

*See view opposite.*

**Temporary anchorages.**—During strong north-easterly  
*General charts 1665, 2836b.*



*Sichusa*  
isled.

*C. Erisos.*

*C. Bria.*

*Port Kalloni,*  
bearing  $63^{\circ}$  true,  
 $7\frac{1}{2}$  miles.

*Mt. Olympus.*

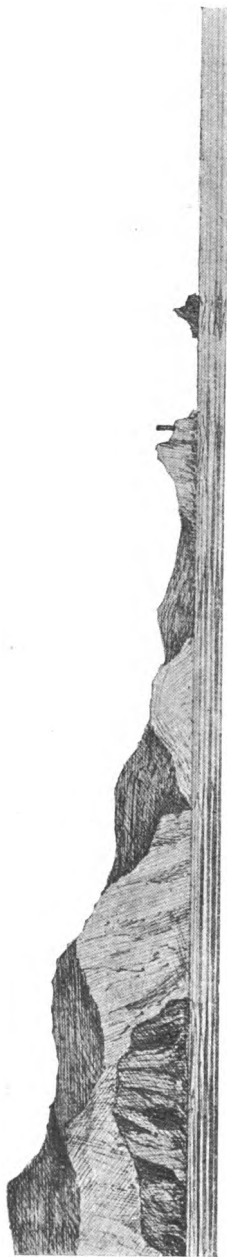
*C. Vurkos.*

Mityleni.—South coast.









*Sigri island.*  
Sigri island lighthouse bearing  $196^{\circ}$  true, 13 miles.  
*Lighthouse. Sidusa islet.*

*Mt. Ordymnos.*



*C. Vurkos.*

*Sigri I.* Sidusa, Entrance to  
bearing Fort Sigri.  
 $83^{\circ}$  true,  
 $3\frac{1}{4}$  miles.  
Mityleni. — West coast.

*C. Erisos. C. Erisa,*  
bearing  
 $112^{\circ}$  true.

*Chart 1665, Mityleni island, &c. Var. 2° 40' W.*

winds there is good anchorage in from 10 to 7 fathoms water in Brisa bay, at about 2 miles north-westward of Cape Brisa; it will be known by a fine beach, having a little islet off its eastern end, and a valley with several olive groves and a few houses. Vessels will also find anchorage off a sandy beach at about  $2\frac{1}{4}$  miles east-south-eastward from Cape Sigri, in about 14 fathoms, but no further out; at three-quarters of a cable outside this depth there will be 20 fathoms. The anchorage in Brisa bay is the best in the vicinity, but vessels at anchor in either of these bays should leave immediately a gale abates.

*Plan 1671, Port Sigri.*

**Cape Sigri** is a steep irregular cliffy projection, 200 feet high, and conspicuous from the southward by its abrupt termination, but from the westward it becomes blended with the high land, and is not then readily distinguished, but the cliffs of Sigri island showing white form a good mark; the little islet of Sidusa, 180 feet high, is also remarkable from its conical form. Cape Sigri itself has been undermined by the sea, and the débris from the cliff falling seaward has formed a rocky ledge. Off the cape is a rock, 8 feet high, joined to the shore by a ledge just covered. Mount Ordymnos, 1,780 feet high, on the summit of which is a monastery, is a good distant mark; from the southward, the mount has a peaked appearance, which disappears when seen from the northward. From the north-north-eastward, the western side of Mityleni appears to slope gradually down to the water's edge, and the lighthouse on Sigri island, when visible, is a conspicuous object at a good distance. *See views opposite and on plan.*

**Sigri island** (*Lat. 39° 13' N., Long. 25° 50' E.*), about one mile northward of the cape of this name, is  $1\frac{1}{2}$  miles in length north and south, a quarter of a mile wide and 200 feet high at 6 cables from the south end. Its sea face is cliffy, irregular, and bordered by shallow water and rocks, which extend off about  $1\frac{1}{2}$  cables; and at  $3\frac{3}{4}$  cables northward of the lighthouse and 2 cables from the shore is a  $5\frac{1}{2}$ -fathoms patch.

**LIGHT.**—A light is shown, at an elevation of 180 feet, from a white iron tower, 65 feet high, on the west extreme of Sigri island.

**Sidusa islet.**—Fronting the entrance to Port Sigri, and about three-quarters of a mile west-south-westward from the southern end of Sigri island, is Sidusa, a conical islet, 180 feet high, 2 cables in extent, and surrounded by rocks above and below water.

**Ledges.**—A rocky ledge extends from Sidusa islet 3 cables north-

*General charts 1665, 2836b.*



Sigri island lighthouse.

*Plan 1671, Port Sigri. Var.  $2^{\circ} 40'$  W.*

north-eastward, on the outer end of which is a rock 2 feet high; another ledge with large rocks 5 to 10 feet high on it projects about the same distance south-eastward; the extreme of the shoal is clearly  
5 visible.

Between the 5-fathoms lines surrounding Cape Sigri and Sidusa islet, the passage is 4 cables wide. Between Sidusa islet and Sigri island, the width of the channel between the same contour lines is  $4\frac{1}{2}$  cables.

10 **Phanæ islet.**—A small islet surrounded by shoal water, named Phanæ, 30 feet high, lies close to the shore at the eastern side of entrance to Port Sigri, with about  $1\frac{1}{2}$  fathoms of water between it and Mityleni. The shoal water extends about  $1\frac{1}{4}$  cables westward and north-westward from the islet.

15 **PORT SIGRI** (*Lat.  $39^{\circ} 12'$  N., Long.  $25^{\circ} 51'$  E.*).—Sigri island forms together with a bay in the coast a convenient and spacious port with from 15 to 7 fathoms water, mud, or mud and weed; the northern end of Sigri island is less than 2 cables from the cliffs of the coast, and between the reefs extending from either side is a narrow  
20 passage, with a least width of about 130 yards, carrying  $2\frac{1}{2}$  fathoms water into the port. The shore on the Mityleni side of the port is bordered by shallow water, and on a projecting point of the coast is the village and fort of Sigri. The eastern coast of Sigri island is also bordered by shoal water, which, abreast the pier near the centre,  
25 extends eastward  $2\frac{3}{4}$  cables from the shore.

The anchorage is with the fort bearing about  $107^{\circ}$  true, distant a quarter of a mile, in 12 to 14 fathoms, or farther northward in 7 to 9 fathoms, sheltered from nearly all winds. The bottom is reported to be good holding ground, but vessels with light anchors are liable to  
30 drag unless in muddy bottom.

The port is a place of refuge for vessels bound to or from Constantinople with contrary winds. During the warm season there is nearly always a fresh north-easterly wind, rendering the climate most enjoyable.

35 The village of Sigri consists of a cluster of small houses and a mosque. The streets are irregular and paved with cobbles. The inhabitants are all Mohammedans, but the majority speak Greek. There is a small stone pier near the fort.

**Caution.**—The soundings in the survey from which the plan of  
40 Port Sigri is taken, not being in sufficient detail, caution must be used in approaching its shores.

**Directions.**—During strong adverse winds, shelter will be found in Port Sigri, and a steam vessel will have no difficulty in entering either north or south of Sidusa islet.

*General charts 1665, 2836b.*

*Plan 1671, Port Sigri. Var. 2° 40' W.*

Port Sigri, with strong north-easterly winds, is difficult of access in a sailing vessel, but if it is determined to enter, the shoal bank extending from the south end of Sigri island and the ledges from Sidusa and Phanæ islets should be avoided. With a moderate breeze a vessel can work in, and the dangers will probably be recognised by the discoloured water. 5

**Supplies** of meat, vegetables, and bread can be obtained, in addition to which abundance of grapes, figs, melons, &c., are to be had, and the hill sides close to the anchorage swarm with partridges. 10

**Telegraph.**—Port Sigri is a telegraph station.

*Chart 1665, Mityleni island, &c.*

**Ordymno point** (*Lat. 39° 18' N., Long. 25° 56' E.*), the north-western extreme of Mityleni, is 6 miles nearly from Sigri island; the coast between is irregular and the water all along deep, but the salient points should be given a wide berth. Between Ordymno point and the point westward of it is a bay, in which is the islet of Agios Ioannis. During south-westerly winds temporary anchorage in 10 or 12 fathoms water will be found in the south-western part of the bay on the east side of Ordymno point. This bay is exposed to north and east winds, and the holding ground is bad; steam vessels seeking shelter here in cases of actual necessity from a south-westerly gale should leave directly it moderates or there is the least indication of any change, as the wind may chop round suddenly to the north and blow with great violence; therefore, not a moment should be lost in leaving on the slightest indication of any change. Ordymno point and Agios Ioannis islet are skirted by rocks, and should be given a wide berth. The neighbourhood abounds with game. 15 20 25

**North coast.**—From Ordymno point the northern coast of Mityleni trends eastward about 12½ miles, and then northward 2½ miles to Cape Molivo. At 2½ miles eastward of Ordymno point, and close inshore off Telonia point, is Merminga rock, above water, and a third of a mile eastward of it is another but larger rock, each with shoal water round. At 1½ miles farther east is Gavatha point, with a rocky spit extending off about 2 cables, and at one mile north-east of the point, and half a mile from the shore, is Gavatha rock above water, near the north end of a shoal, and steep-to. The mountains about one mile within the coast reach a height of 1,235 feet. 30 35

**Petras islet.**—In the bight where the coast turns to the north and about a mile westward of the little village of Petras is the islet of Petras, about one-third of a mile in diameter, and half a mile from the shore; between it and the shore are two rocks above water, the eastern one of which is on a shoal bank, which extends about 4 cables 40

*General charts 1665, 2836b.*

*Chart 1665, Mityleni island, &c. Var. 2° 30' W.*

from the shore, but between the rocks there are 17 fathoms, and 10 fathoms between the western rock and the islet. A sunken rock lies near the north-west side of Petras islet; with this exception  
5 the water around it is deep. From the village of Petras northward the shore is skirted by rocks.

*Plan of Molivo road on chart 1665.*

**CAPE MOLIVO** (Lat. 39° 22' N., Long. 26° 11' E.) is a clifty irregular headland projecting westward and north-westward, and  
10 skirted by rocks.

**Molivo road.**—On the south side of the cape is the little town and castle of Molivo, with anchorage off it during easterly winds in from 10 to 20 fathoms, but the water deepens suddenly.

H.M. ships *Alexandra*, *Achilles*, and *Raleigh* anchored in Molivo  
15 road in September, 1879; the *Téméraire* and *Monarch* anchored in the little bay 1½ miles to the southward near Petras village, in 16 fathoms water, with the north point of Petras islet bearing 276° true. At that season of the year the wind generally blows from the northward and eastward, and an unpleasant swell sets into Molivo  
20 road.

**Supplies.**—Refreshments of all descriptions are plentiful, especially vegetables and fruit.

*Chart 1665, Mityleni island, &c.*

**Cape Skammia.**—From Cape Molivo the coast trends eastward  
25 for 8½ miles to Cape Skammia or Korakas, the northern extreme of Mityleni; it is all along bold, with deep water, except at about 2½ miles eastward of Cape Molivo, where a rocky shoal bank borders the coast eastward for more than a mile. A rock having less than 6 feet of water over it is situated about one cable north-eastward of  
30 Cape Skammia.

At 4½ miles south-westward from Cape Skammia, and 2½ miles inland from the north coast, Mount Lepethymnus is 2,752 feet high.

**LIGHT.**—A light is shown, at an elevation of 66 feet, from a mast over a white house 90 yards from the extreme of Cape Skammia.

**North-east coast.**—**Cape Tomari** (Lat. 39° 20' N., Long. 26° 26' E.) is a clifty headland, 5 miles south-eastward of Cape Skammia; the coast between falls back and forms a bay 1½ miles deep, in the north-western part of which is the little islet of Mono-petra or Vurulako, with shoal water round it, steep-to; between the islet and  
40 coast of Phero point, a distance of about 4½ cables, there are from 16 to 20 fathoms.

**Spit.**—From the southern part of Cape Tomari, a rocky spit, with 2½ fathoms on it, extends eastward one third of a mile.

*General charts 1665, 2836b.*

*Chart 1665, Mityleni island, &c. Var. 2° 30' W.*

**Tomari** or **Tokmoki islands**, southward of the cape of that name, consist of a group of four islets and some rocks, extending over a distance of  $1\frac{3}{4}$  miles nearly, north and south. Between the northern islets and a ledge of rocks above and below water united to the coast is a narrow passage with 12 fathoms water. 5

**Coast.**—From Cape Tomari, the coast trends south-westerly for 4 miles, and then south-east and southerly about 13 miles to the town of Mityleni, the capital of the island. The bight formed by the bend of the coast, south-westward of Tomari islands, is called **Makri bay**, 10 and has convenient depths for anchoring.

**Reported rock.**—A rock is reported to exist, bearing  $257^\circ$  true, distant 9 cables from the south extreme of the southern Aspri island (the southern islet of the Tomari group).

The exact depth over the danger is unknown. 15

**Lismoni islet** or **Erimo nisi.**—In the southern part of Makri bay is the little islet of Lismoni, with a reef extending from its south-western side, and 8 to 12 fathoms water between it and the south shore, a distance of about 4 cables.

At  $4\frac{3}{4}$  miles south-eastward of Lismoni islet is a small inlet, about half a mile in extent, with from 4 to 6 fathoms water, called **Mestegna cove**; and  $1\frac{1}{2}$  miles south-east of the cove is the little islet of **Kidonia**, half a mile from the shore, to which it is united by a ledge with from  $3\frac{1}{2}$  to 5 fathoms on it. There are two other islets or large rocks close to the coast, one 2 miles north-westward of Mestegna cove, the other midway between Kidonia islet and the town of Mityleni. The water all along, at half a mile from the shore, is deep. 20 25

*Plan 381, Mityleni anchorage, &c.*

**Mityleni town** (Lat.  $39^\circ 06' N.$ , Long.  $26^\circ 35' E.$ ), the capital of the island, is on the eastern coast about 6 miles from its south-eastern extreme, on a small peninsula which forms a little port on either side. Of these, North port is the more commodious, being about  $2\frac{1}{2}$  cables deep and 2 cables wide, with from 7 to 2 fathoms water, partly sheltered by a breakwater composed of boulders partially submerged, projecting 380 yards north-westward from the north-east bastion of the citadel; at the extremity of the breakwater is a stone pillar 15 feet high. On the west side of the entrance, a mole of boulders, awash, extends about 115 yards east-north-eastward, and 50 yards southward of it is a wooden jetty extending eastward about 60 yards, with a depth of 10 feet at the head, decreasing to the shore. There is a sea wall on the west side of the port, and just northward of its south end is a short wooden jetty, with a depth of 4 feet at its head. The foreshore at the head of the port is gravel. The depths 30 35 40

*General charts 1665, 2836b.*



*Plan 381, Mityleni anchorage, &c. Var. 2° 30' W.*

decrease gradually from 7 fathoms in the entrance towards the head, the bottom being sand and weed; at three-quarters of a cable from the head there are 2 fathoms, mud. The eastern side of the port is  
 5 very foul and dangerous for a distance of a quarter to two-thirds of a cable from the breakwater, and the western side is fringed with rocks between the two jetties. The port is frequented by the larger vessels that visit Mityleni (*Lat. 39° 06' N., Long. 26° 35' E.*).

South port, from  $3\frac{1}{2}$  to  $1\frac{1}{2}$  fathoms deep, is the best harbour for  
 10 small coasters and the more frequented; the entrance is between two old mole heads, on each of which is a white house with a red roof and mast.

The town itself presents a most thriving appearance from the sea, is clean and well built. The hill sides for some distance around are  
 15 covered with villas and orchards.

**LIGHTS.**—On the point near the citadel, between the two ports of Mityleni, is a white house with a mast on it, from which a light is exhibited, at an elevation of 99 feet above the sea.

Also, at South port, a light is shown from a mast on white house  
 20 with red roof, on each mole head, at an elevation of 23 feet above the sea.

**Shoal.**—A patch with  $4\frac{1}{2}$  fathoms over it lies two-thirds of a cable eastward from the lighthouse near the citadel.

**The anchorage** off the town is in about 10 fathoms, sand and  
 25 weed, with the South mole head or light of South port bearing  $282^\circ$  true, or  $295^\circ$  true, and the light on the extreme of the peninsula  $0^\circ$  true, or, if necessary, farther out.

This anchorage and Kabakum bay, on the mainland opposite, are good stopping places, according as the wind is westward or eastward  
 30 of South, when unable in a sailing vessel to work up the Gulf of Smyrna.

**Communication.**—There is telegraphic communication between Mityleni and the rest of the world, also good postal arrangements, there being occasional connection with Saloniki and the ports of Mity-  
 35 leni island. A good road leads from the town to Port Iero.

The telegraph office is open until midnight.

**Supplies** can be obtained at the town of Mityleni at moderate prices.

**Coal.**—About 3,500 tons of Heraclea coal are imported annually,  
 40 1,500 tons being usually in stock; it is put on board in lighters, each carrying 30 tons. Working night and day, about 800 tons can be put on board in 24 hours.

*General charts 1665, 2836b.*

*Chart 1664, Port Iero or Olivieri. Var.  $2^{\circ} 20'$  W.*

**Coast.**—The coast between the town of Mityleni and Cape Zeitin (*Lat.  $39^{\circ} 01'$  N., Long.  $26^{\circ} 37'$  E.*) (page 432), the south-eastern extreme of the island, a distance of 6 miles, is bold, and Mount Agios Marino rises over it 1,740 feet high. At about half a mile from the shore there are from 10 to 20 fathoms water. 5

*Chart 1665, Mityleni island, &c.*

**MITYLENI CHANNEL.**—This channel is bounded by the island of Mityleni on the west, and the coast of the mainland on the east. Its general direction is north-north-west, and length 30 miles, with an average breadth of about 8 miles, but between Tomari and Eleos islands at the northern part, the distance is only  $3\frac{1}{2}$  miles. The navigation is easy, the channel is well lighted, and the only off-lying danger is Eleos rock, lying about a mile southward of Eleos pulo (*see* page 445). 10 15

**Coast.**—From Cape Mal-tepeh (*see* page 431), the coast of the mainland trends northward  $2\frac{1}{2}$  miles to the entrance of South channel to Port Ajano; it is very broken and irregular, but steep-to and clear of danger.

*Plan of Port Ajano on 1878.*

**Cane or Ajano islands.**—The Cane or Ajano are two islands united by a bank with from about 2 to 4 feet water on it; the inner of the two, which is called Makro nisi, is a mile in length north and south, and forms with the coast of the mainland a narrow passage to Port Ajano, bordered by shoal water on either side, but from 5 to 10 fathoms deep, and called South channel. The shoal water extends nearly three-quarters of a cable southward from the south end of Makro nisi. On the mainland within the entrance are the ruins of Cane, and hot springs. 20 25

The outer Cane island is about three-quarters of a mile in length, and its western coast is clear of danger. At about 6 cables northward of it, and the same distance from the coast, are the Nikolo rocks with shallow water extending a quarter of a mile eastward. The largest rock has a white house upon it. 30

**Shoal.**—A  $3\frac{1}{2}$ -fathoms patch lies 3 cables east-north-eastward from the north extremity of Nikolo rocks. 35

**PORT AJANO** (*Lat.  $39^{\circ} 01'$  N., Long.  $26^{\circ} 49'$  E.*) is a narrow inlet running in about one mile north-eastward; the inner part is shallow, but in the outer part over a length of about 4 cables, and a width of little more than one cable, there are 5 to 6 fathoms water. The north channel, between the Cane islands and the Nikolo rocks, about 3 cables wide, is a narrow passage between the shoal banks on 40

*General charts 1665, 2836b.*

*Plan of Port Ajano on 1878. Var. 2° 20' W.*

either side, and only  $3\frac{1}{4}$  fathoms deep. The south channel between Makro nisi and the main is described above.

*Chart 1665, Mityleni island, &c.*

- 5 **Kabakum bay.**—From Port Ajano the coast trends round to the east-north-eastward for  $5\frac{1}{2}$  miles, and then turns north-westward for about  $17\frac{1}{2}$  miles to Tuz burnu, the south-western extreme of a hilly peninsula. The southern portion of this coast forms a bight  $4\frac{1}{2}$  miles deep, called Kabakum bay, with from 20 to 8 fathoms water, mud  
10 bottom, and where shelter may be obtained from southerly and easterly winds; the village of Dikili is in the eastern corner of the bay.

- LIGHTS.**—At about half a mile north-north-westward from the village of Dikili, two lights, placed vertically, are exhibited at an  
15 elevation of 59 feet above the sea.

**Trade.**—The principal exports are barley, valonia, beans, peas, wheat, and raisins; the principal imports are sugar, cattle, flour, rice, salt fish, and sacks.

**Communication.**—Dikili is a telegraph station.

- 20 **Suna bay or Tatli Su** (*Lat. 39° 15' N., Long. 26° 42' E.*), at the northern end of the coast just mentioned, affords shelter from all northerly and easterly winds, in from about 18 to 8 fathoms, mud. In the southern part of Suna bay, a sandy tongue called Suna point projects upwards of one mile north-westward, forming on its northern  
25 side the bay of Ayasmata, with 4 fathoms water at the entrance, but shallow within. At the head of the bay is the Dogana or Custom house.

- Shoal.**—A patch of 2 fathoms lies in the eastern part of Suna bay, about one mile southward of Aspro point and three-quarters of a mile  
30 from the nearest shore.

The eastern shore of Suna bay and the coast southward of it are bordered by shallow water, which, in the bay, is reported to be extending westward, and south of Suna point shoals off  $1\frac{1}{4}$  miles.

- Telegraph cable.**—Near Aspro point, in Suna bay, is landed a  
35 cable from the town of Mityleni, which affords connection between the latter and the town of Aivali; vessels should avoid anchoring near it.

*Plan 1672, Mosko-nisi and Aivali bay.*

- MOSKO ISLANDS.**—This group consists of about twenty  
40 islands, islets, and rocks, all of them most irregular in shape, with numerous sunken dangers, extending over an area of about 8 miles north and south, by  $9\frac{1}{2}$  miles east and west. Mosko islands lie north-

*General charts 1665, 2836b.*

*Plan 1672, Mosko-nisi and Aivali bay. Var. 2° 20' W.*

ward of Tuz burnu, and bound the eastern side of the northern part of Mityleni channel.

**Eleos island**, which, with Eleos pulo, are the westernmost of the Mosko islands, is about half a mile in diameter, and surrounded by shoal water, which at its north-western point extends off nearly  $1\frac{1}{2}$  cables. Close-to, on its south-western side, is Eleos pulo, a clifty islet,  $2\frac{3}{4}$  cables in length, with rocks extending a cable south-westward. These and the Tomari islands to the westward, as already stated, form the narrowest part of Mityleni channel, the distance across being  $3\frac{1}{2}$  miles. 5 10

**LIGHT.**—A light is shown, at an elevation of 197 feet, from a white stone tower on the summit of Eleos island.

**Eleos rock** (*Lat. 39° 18' N., Long. 26° 33' E.*).—This danger, with  $2\frac{1}{2}$  fathoms water on it, is situated  $1\frac{3}{10}$  miles,  $184^\circ$  true, from Eleos island lighthouse, and rises from a rocky shoal 2 cables in extent north and south, with from 3 to 5 fathoms on and 6 to 18 fathoms around it. When in the vicinity of the rock Eleos lighthouse should not be brought to bear between  $354^\circ$  and  $13^\circ$  true. See views 2 and 4 on plan 1672. 15 20

**GYMNO ISLAND**, in the form of a boot with its toe to the south-west, is upwards of  $1\frac{3}{4}$  miles in length,  $1\frac{1}{4}$  miles in greatest breadth, and 175 feet high. Shoal water extends from 2 to 3 cables off its shores, excepting at Ali burnu, where it is moderately steep-to. See view 4 on plan 1672. 25

**LIGHTS.**—Two lights placed vertically are exhibited, at an elevation of 65 feet, on Ali burnu, the south-eastern extreme of Gymno island.

**Anchorage.**—Ali burnu is separated from the shore of Tuz burnu by a passage nearly 4 cables wide, but which is narrowed to half that distance by shoal water on either side, leaving in mid-channel a depth of 9 fathoms, leading into a roomy and well-sheltered anchorage with 15 to 17 fathoms water, soft mud bottom, between Gymno island and the coast. The anchorage, which has occasionally been used by the British squadron, extends as far north as Rowley point, but there it is more exposed; it is commonly called Mosko-nisi anchorage. 30 35

**Caution.**—The shoal water from the shore northward of Tuz burnu is reported to have extended more into the channel than was formerly supposed. It is therefore necessary, when passing between this point and Gymno island, to keep nearer the island than the mainland. 40

*General charts 1665, 2836b.*

*Plan 1672, Mosko-nisi and Aivali bay. Var. 2° 20' W.*

**Current.**—A current generally sets strongly through the passage to the northward.

**Tuz burnu** (*Lat. 39° 16' N., Long. 26° 38' E.*) is precipitous, and of a whitish colour, the only cliffs in the vicinity presenting such an appearance.

**Water.**—Opposite Gymno, on the margin of the beach, in the hollows between the hills, fresh water may be obtained by sinking wells 3 or 4 feet deep. During the winter season the ground, owing to the rain, is everywhere full of springs, but in dry weather there would be difficulty in procuring a large supply of water, as there are no permanent springs in the vicinity of the anchorage.

**CALEDONIA SHOAL.**—This shoal, within the depth of 5 fathoms, is about a quarter of a mile in length north and south, and has from 2 to 4 fathoms water on it, and 6 to 18 fathoms close around it. The shoalest part lies nearly 7 cables northward from the north point of Gymno island. See views 1, 3, and 5 on plan 1672.

**Mosko island.**—This irregularly-formed island extends about  $4\frac{1}{2}$  miles north and south, and  $3\frac{1}{2}$  miles east and west, and is separated from the northern extreme of Tuz burnu peninsula by a distance of about  $1\frac{1}{2}$  cables, and across the shallow flat (which till recently joined them) has been dredged a channel, which will be alluded to later on, in the description of Aivali bay. It may be said to be divided into two portions; the southern part is the larger, and in the centre is 623 feet high, with a projection to the eastward covering Aivali bay.

The northern part of Mosko island is comparatively narrow, running east and west, with a hill at each end, that on the west being 487 feet high. The two portions of the island are united by a narrow neck of land, being in one place only about 2 cables across, and  $1\frac{1}{2}$  miles in length. The shore all round the island is contorted and bordered by shallow water and rocks.

To the eastward of Mosko island are several islets, rocks, and shoals with deep water between them, through which the eye and chart must be the guide.

**Mosko road** (*Lat. 39° 20' N., Long. 26° 38' E.*).—On the western side of Mosko island is Mosko pulo close to, with a narrow boat passage between them. The bight formed by the southern coasts of the two islands is called Mosko road, where there is limited anchorage in 11 to 13 fathoms, mud bottom, but open to the south-west.

**Shoal.**—In addition to the spits extending from the south coast of Mosko island to a distance of 3 to 4 cables, an isolated shoal, with 3 fathoms on it, lies 6 cables southward from the south-east extremity

*General charts 1665, 2836b.*

*Plan 1672, Mosko-nisi and Aivali bay. Var. 2° 20' W.*

of Mosko pulo, and  $4\frac{1}{4}$  cables from the south-west point of Mosko island.

At about  $6\frac{1}{2}$  cables westward of Mosko pulo is Kalamo islet, and partly covering the space between the two, on the north, is Leiah islet, the three islets forming another anchorage, with 8 to 11 fathoms, mud. 5

**Kalamo pulo**, with shoal water extending from it  $1\frac{3}{4}$  cables to the south-eastward, lies half a mile westward of Kalamo; the water is deep between these two islets, excepting that  $1\frac{3}{4}$  cables westward of the south-west extremity of Kalamo there is a rock above water and others visible and covered close around it. Between Kalamo pulo and Eleos island, before alluded to, the passage in mid-channel is clear and deep. See views 1 and 2 on plan 1672. 10

**AIVALI BAY.**—This landlocked sheet of water extends 4 miles in a north-east and south-west direction with a most irregular outline, its extreme breadth being  $1\frac{1}{2}$  miles. The depth in the central part, over a level bottom, is 6 fathoms, which decreases towards the extremes. 15

The bay is covered on the north by Mosko and Krommido islands, and the latter is joined to the mainland by a causeway through the shallow water. See views 3 and 4 on plan 1672. 20

**Taliani pass.**—The west entrance to Aivali bay, called Taliani pass, is between Mosko island and the north extremity of Tuz burnu peninsula. The artificial channel, with a depth of  $2\frac{3}{4}$  fathoms, is nearly a mile in length and 40 yards broad at the bottom, which is partly rock and partly sand. 25

The Mosko island side of the channel is marked by red buoys and beacons, the south side by white buoys and beacons.

**Lights** (*Lat. 39° 19' N., Long. 26° 40' E.*).—A light is exhibited from the western beacon, which stands insulated on the edge of the bank extending from the south shore of Mosko island. The remainder of the channel is illuminated by six lights, arranged in pairs, three lights on each side of the cutting. 30

**Tidal stream.**—There is a perceptible tidal stream running through this channel, and there appears to be a rise and fall of about 2 feet in Aivali bay. 35

**Directions.**—If taking this channel, approach the outer pair of buoys on a 60° true bearing.

**North entrance.**—The north entrance between Mosko and Krommido islands is a narrow channel, with a least depth of 2 fathoms, and marked by three beacons and four buoys. The outer beacon is placed on the small islet on the north side of the entrance, 40

*General charts 1665, 2836b.*

\* *Plan 1672, Mosko-nisi and Aivali bay. Var. 2° 20' W.*

the two inner beacons are placed on either side of nearly the narrowest part of the channel, and just within two piers that extend a short distance from each island. Two buoys are moored near the outer  
5 entrance, and two near the inner entrance. The fairway lies between the buoys and between the two inner beacons.

**Anchorage.**—The anchorage of Aivali, on the east side of the bay, is good, there being deep water and good holding ground close to the town.

10 **Towns.**—On the eastern shore of the bay is the town of Aivali, containing a population of about 60,000 inhabitants, nearly all of whom are Christians. The town possesses several olive oil mills, including one for its production from olive stones; it also has several soap factories and tanyards. The town of Mosko, with a population  
15 of about 8,000, is on Mosko island, in the north-west corner of the bay.

**Communication.**—Aivali is in telegraphic connection with the rest of the civilised world. In normal times steamers run frequently to Smyrna, Mityleni, and Constantinople, and weekly to Lemnos, Dédé  
20 Agatch, and Saloniki.

**Trade.**—The exports consist principally of oil, soap, hides, and flour; and the imports of raw hides, wheat, sugar, &c.

**Water** is reported good, and provisions plentiful at Aivali.

**Pyrgo** (*Lat. 39° 23' N., Long. 26° 36' E.*) is an irregularly-shaped  
25 island, about  $1\frac{1}{2}$  miles in length north and south, with a tower on its summit 295 feet above the sea; it is nearly united, about the middle of the east coast, to the west extreme of the northern part of Mosko island, the two forming a deep bay open to the south, with several shoal patches.

30 **Mosko island, N.E. anchorages.**—During strong winds from E.N.E. anchorage will be found under the lee of Kudhu island, in from 6 to 9 fathoms, soft bottom. This island lies  $1\frac{1}{2}$  miles south-eastward from Mavromati point, the north-east extremity of Mosko island. The anchorage north-eastward of the town of Mosko is in  
35 from 10 to 15 fathoms, but exposed to the E.N.E. wind, which is the worst at this anchorage, blowing down the Gulf of Adramyti. Merchant vessels visit the anchorage for oil.

Of the other Mosko islands and dangers it is useless to give a more detailed description, and the navigator is therefore referred to the  
40 Admiralty plan 1672 and views thereon.

*Chart 1665, Mityleni island, &c.*

**MUSELIM CHANNEL** is the name given to the channel separating the north coast of Mityleni island from the mainland, and

*General charts 1665, 2836b.*

*Chart 1665, Mityleni island, &c. Var. 2° 30' W.*

leading to the Gulf of Adramyti and Mityleni channel. The southern shore of Muselim channel may be said to be comprised between Capes Molivo and Skammia (*Lat. 39° 23' N., Long. 26° 21' E.*), described on page 440. The north shore consists of the coast between Cape Baba and Katagar point. The least width of the channel is  $4\frac{3}{4}$  miles, and, with the exception of the dangerous Muselim rock and patches (described below) and the shoals eastward of Sivriji point, mentioned later, it has no outlying dangers. 5

**MUSELIM ROCK.**—Muselim rock, in the middle of the channel of that name, is awash, and is situated  $4\frac{1}{2}$  miles,  $54^\circ$  true, from Cape Molivo. A patch with 4 fathoms water on it lies at one-third of a mile north-westward from the rock, and another patch with the same water over it 4 cables east-south-eastward from it. A shoal, on which the depth was not obtained, was reported by the French frigate *Zénobie*, in 1861, to be situated half a mile northward from Muselim rock. The existence of this shoal must be considered doubtful. The water is deep all round these dangers, which are easily avoided by keeping one mile or so either from the northern or southern shore of the channel. 10 15 20

**GULF of ADRAMYTI.**—This gulf, in continuation of the Muselim channel (*see* page 448), is upwards of 20 miles long, and between the Mosko islands and the shore north of them about 8 miles wide. The coast on the north is closely backed by high mountainous land, and 8 miles in from near the head of the gulf Mount Ida attains an elevation of 5,750 feet above the sea. The land on the south side of the gulf is hilly, with chains of mountains in the interior, and  $11\frac{1}{2}$  miles from the sea is Mount Sailejik, 4,010 feet high, whilst the land at the head of the gulf is an extensive, rich, and well-cultivated plain. 25 30

**Cape Kara tepeh** (ancient *Pyrrha prom.*), on the south side of the gulf, and about  $6\frac{3}{4}$  miles east-north-eastward from Mosko island, is a bold rounded headland, and, like Dahlina point  $3\frac{3}{4}$  miles farther on, may be rounded at a short distance; the coast between the two points forms a bight  $1\frac{1}{2}$  miles deep. 35

**Coast.**—From Dahlina point, the coast in front of a ridge which culminates in a hill 595 feet high, trends eastward 3 miles, and then continues low northward and round westward, forming the head of the gulf. The bend in the coast in the south-east is called Kemer bay, from the village of the same name  $2\frac{1}{4}$  miles inland to the eastward. A river runs into the bay, and on the south-east shore is the Custom house. At the north point of the bay, half a mile northward of the river, is an ancient mole, and southward of it are some ruins. 40

*General chart 2836b.*



*Chart 1665, Mityleni island, &c. Var. 2° 30' W.*

**Rock** (Lat. 39° 30' N., Long. 26° 56' E.).—A rock, with a depth of 3 feet over it, is situated about 6½ cables south-westward from the ancient mole on the northern point of Kemer bay.

- 5 **CAPE BABA** (Lat. 39° 29' N., Long. 26° 04' E.).—This head-land (ancient *Lectum prom.*), the north entrance point of the Gulf of Adramyti, is high and bold, the termination of mountainous land, which at less than 2½ miles within, rises 1,665 feet above the sea, a rather less elevation than Mount Ordymnos of Mityleni. Coming  
10 from the northward, and when abreast of the cape, it appears to descend almost perpendicularly to the sea, though on opening Lodos point to the eastward, which slopes gradually and is not nearly as high, this appearance is lost. The cape is 7½ miles westward of Sivriji bay, and between, excepting the narrow banks  
15 bordering the shore, the water is all along deep. On the cape is a village and castle, and thence the coast trends north-north-eastward 7 miles to the River Tuzla.

An extensive shoal bank borders the shore in the vicinity of the river, extending off three-quarters of a mile, and falling suddenly  
20 to deep water. This latter part of the coast should be given a wide berth.

For continuation of the coast northward, *see* page 466.

**Sivriji point** is 8½ miles eastward from Cape Baba, and will be known by the white lighthouse on it.

- 25 **LIGHT.**—A light is shown, at an elevation of 66 feet above the sea, from a mast over a white house 110 yards from the extremity of Sivriji point.

**Sivriji bay**, westward of the lighthouse, is about 1½ miles wide at the entrance, and two-thirds of a mile deep, with from 17 to  
30 8 fathoms water, which gradually shoals. An ancient mole, appearing like a reef, runs off from the eastern side of the bay. When entering the bay from the eastward or leaving it for that quarter, the shoals eastward of Sivriji point should be given a wide berth, and the lighthouse kept bearing northward of 311° true.

- 35 Muselim rock bears from the lighthouse, 175° true, distant 2¾ miles. *See* page 449.

The shore for upwards of one mile north-eastward of Sivriji point is foul, and shallow water with patches of 3 and 4 fathoms extends off nearly a mile, the outer patch of 3 fathoms lying nearly one mile  
40 eastward from the lighthouse, and falling down suddenly to deep water.

On the 3-fathoms patch 5 cables eastward of the lighthouse on Sivriji point is the wreck of an iron vessel (1916).

*General chart 2836b.*

*Chart 1665, Mityleni island, &c. Var. 2° 20' W.*

From Sivriji point the coast trends  $6\frac{1}{4}$  miles eastward to a projecting point named Katagar (*Lat. 39° 29' N., Long. 26° 23' E.*).

At 2 miles westward of Katagar point is another point, less salient, with a shoal bank extending about  $1\frac{1}{2}$  cables from it; between the two points is a bay with the remains of an ancient mole, and a little inland is the village of Behram and the ruins of ancient *Assos*. 5

**Coast.**—The coast from Katagar point for several miles has scattered towns and villages, backed by high land, and farther eastward is thickly wooded with olive trees; it is all along clear of danger (excepting a shallow patch bordering the shore close in here and there) for  $22\frac{1}{2}$  miles to Kara point, low, salient, and steep-to. 10

At  $1\frac{1}{2}$  miles north-eastward of Kara point is a low point, and between them a little river runs into the sea.

**Ilija bay** is  $2\frac{1}{4}$  miles north-eastward of Kara point, and here there is anchorage in 9 fathoms, muddy bottom, about half a mile from the shore, or farther out if necessary. 15

Near Ilija bay are hot springs and baths.

**Water.**—Good water can be procured in any quantity from a clear running stream. Boats can go either side of the entrance, and hoses of 30 or 40 fathoms in length will lead into them. At one cable from the river there are 5 fathoms water, so that vessels coming here expressly for water may anchor as near as convenient. 20

**Axia bay**, 2 miles eastward of Ilija bay, is in the north-east corner of the gulf, and vessels may anchor off the village in any convenient depth in from 17 to 7 fathoms, mud; the latter depth will be about half a mile from the shore at the head of the bay. The town of Adramyti (ancient *Adramyttium*), from which the gulf takes its name, stands about 5 miles to the eastward. 25

**Communication.**—The town of Adramyti is a telegraph station. 30

**Supplies.**—Oxen, sheep, poultry, vegetables, &c., can be procured from the neighbourhood and town of Adramyti.

**Water.**—Several streams run into the sea near the village, and a plentiful supply of good water may usually be obtained.\* 35

*Chart 2836b, Archipelago, northern portion.*

**SPITFIRE BANKS.**—These banks, with less than 100 fathoms of water, are two in number, and are situated to the westward of Mityleni in the middle of the passage from the Doro channel to the Dardanelles. The southern bank, roughly oblong, 15 miles in length, north-west and south-east, by about 9 miles in breadth, has two 40

\* No water could be obtained at this season, the stream being dry.—Lieutenant E. L. Lang, H.M.S. *Scout*, 30th August, 1888.

*Chart 2836b, Archipelago, northern portion. Var. 3° W.*

heads, Stokes bank, with 45 fathoms of water in lat.  $38^{\circ} 53' N.$ , long.  $25^{\circ} 25' 30'' E.$ , and Brooker bank with 50 fathoms of water (Lat.  $38^{\circ} 52' N.$ , Long.  $25^{\circ} 20' E.$ ). The northern bank, 19 miles long  
5 in a north-easterly and south-westerly direction by 4 miles wide, also has two heads, Johnston bank, with 21 fathoms of water, mud, in lat.  $39^{\circ} 18' 30'' N.$ , long.  $25^{\circ} 23' E.$ , and Mansell bank with 50 fathoms of water in lat.  $39^{\circ} 13' N.$ , long.  $25^{\circ} 17' E.$  These banks consist of sand, shells, and coral, and are surrounded by depths of from 100 to  
10 300 fathoms with a clay bottom.

**Currents.**—Westward of Spitfire banks, from eastward of Strati to 15 miles east of Skyros, in September, 1916, no current was found with a light S.S.W. wind; some days later, in the same region, a current set south-south-westward three-tenths of a mile an hour with a  
15 light southerly wind, which for the previous 24 hours had been moderate.

Between  $20'$  east of Skyros and Doro channel, in November, there was no current, with a light breeze from north-north-west.

Between Strati and Lemnos, in October, 1916, a current was  
20 observed setting west-south-west nearly one mile an hour, with a moderate northerly breeze.

Between Psathura and Lemnos, in the same month, a set of three-tenths of a mile an hour to the northward of east was observed with a light northerly breeze, which had been fresh from the south-west for  
25 24 hours previous.

*Plan of Strati island on 1891.*

**STRATI ISLAND.**—This island (ancient *Nee*) is triangular in shape with its sharp end to the southward; it is 6 miles in extent north and south, about  $3\frac{1}{2}$  miles in greatest breadth, and 973 feet  
30 high. On its west side, about  $1\frac{1}{2}$  miles from its northern end, is a little bay, and a village named Agios Strati. The population of the island is about 1,000.

**Rubos islet** (Lat.  $39^{\circ} 32' N.$ , Long.  $25^{\circ} 03' E.$ ).—North-north-eastward,  $4\frac{1}{2}$  cables from Cape Thascoli, the eastern point of the island,  
35 is a small rocky islet named Rubos, with shoal water extending one-third of a mile from it. Cape Thascoli is surrounded by rocks above water and sunken, and shoal water extends 3 cables eastward from it; at the same distance north-eastward from the cape is a sunken rock, with less than 6 feet of water on it, near the edge of the shoal  
40 bank. Between the sunken rocks on either side of the passage inside the islet there are  $4\frac{1}{2}$  fathoms water.

**Agios Apostoli islet.**—A small islet, named Agios Apostoli, lies  $1\frac{1}{4}$  cables off Cape Kalamaki, the northern extreme of the island, to which it is connected by a reef; 2 cables from the islet there are

*General chart 2836b.*

*Plan of Strati island on 1891. Var. 2° 50' W.*

25 fathoms water; elsewhere, except in the vicinity of Cape Thascoli and Rubos islet, shoal water in no case extends more than 2 cables off shore. Strati island is about 16 miles from the nearest part of Lemnos island.

*Chart 1659, Lemnos.*

**LEMNOS.**—This island, called Stalimeni by the Turks, in the middle of the northern part of the Ægean sea between the base of Mount Athos and the island of Tenedos, is an irregular quadrilateral, about 15 miles each way, and nearly divided into two parts by the bay of Purnea on the north, and that of Mudros on the south. The island is hilly, but of no great elevation. Mount Skopia, at the north-western extreme, is 1,410 feet high, Mount Therma in the south-western part, 1,130 feet, and Mount Phako on the south coast 1,106 feet high.

**Caution.**—With the exception of Lemnos, the surveys on which chart 1659 is founded are imperfect.

**Productions, population, &c.**—The hills are rugged and of barren appearance, and the soil for the most part thin and sandy; in some places, particularly in the west and south, corn, oil, wine, fruit, and a small quantity of cotton are produced, and a few cotton stuffs are manufactured. Grain and wine are the only exports. The population of the island is about 27,000, mostly Greeks, many of whom are employed in fishing. Kastro, the principal town, and where the governor resides, is on the west coast. *See page 462.*

**Communication.**—By three lines of steamers frequent connection is kept up with Saloniki. Kastro is also a telegraph station.

**Cape Irene, Stala, or Agios Nikolo,** the south-eastern extreme of Lemnos, and much lower than the land within it, is bold and salient, and its south side may be approached to the distance of a quarter of a mile.

*Plan 1661, Port Mudros.*

**Cape Valanidhi** (*Lat. 39° 47' N., Long. 25° 18' E.*),  $2\frac{1}{2}$  miles west-north-westward from Cape Irene, is lower, with a reef running off it 4 cables, which should be given a wide berth in passing, though it may generally be known by the colour of the water; Phako point, 282° true, well open southward of Kastro island, leads southward of it.

**MUDROS BAY** is the name given to the outer portion of an extensive inlet on the south side of Lemnos island, trending 4 miles in a north-north-west direction, and then the same distance north-easterly; the latter portion being known as Port Mudros, to be presently described. The entrance points to the bay may be considered as Cape Valanidhi on the east, and Kombi

*General charts 1659, 1087, 1086, 2836b.*

*Plan 1661, Port Mudros. Var. 2° 50' W.*

- point on the west, distant from each other about  $3\frac{1}{2}$  miles. With the exception of Cape Valanidhi reef, and a fringe of shoal water extending from one to 2 cables from each shore, the bay is free from
- 5 outlying dangers as far as the line joining Buda and Limni points, but inside the 3-fathoms line there are many rocks which are dangerous to boats. It has from 24 to 13 fathoms water, mud bottom, and though open to the south-east, is an excellent summer anchorage for any number of large ships, and is reported to be safe in winter.
- 10 Limni point is easily discernible, being of a reddish colour, with a white patch near the extreme.

**Kombi point**, the western point of entrance to the bay, is a rounded point surmounted by Dawkins hill, 282 feet high, being the end of a long ridge from Mount Phako. *See view on plan 1661.*

- 15 **Kombi island**, 177 feet high, is connected with Kombi point by a rocky ledge, shoal water extending upwards of 3 cables to northward of the connecting reef, and from  $1\frac{3}{4}$  cables to nearly one cable north-eastward of the island, the least distance being off the north-east point.

- 20 **LIGHT**.—A light is shown, at an elevation of 187 feet above the sea, from a white masonry tower, 33 feet high, on the summit of Kombi island.

- Kastra island**, a cable to the southward of Kombi island, is a cliffy island about 140 feet high; it should be given a berth of at least
- 25 a quarter of a mile. There is a narrow boat passage between it and Kombi island.

- Water** can be obtained from a small stream,  $1\frac{1}{2}$  miles eastward of Cape Malathria, on the eastern side of Mudros bay. In the month of August a fair supply may be procured; a launch can approach within
- 30 50 or 60 yards of the beach, and the water can be pumped from a pool about 12 yards inshore, where it is quite fresh; the stream has no apparent outlet. At nearly half a mile southward of the river a small quantity of water may be obtained from a well, convenient for boats. In the dry season the other rivers in the bay are either brackish or
- 35 salt, but afford evidence of having a plentiful supply of water during the rainy season.

- PORT MUDROS** (*Lat. 39° 52' N., Long. 25° 15' E.*).—The entrance points to this spacious and well-sheltered harbour may be considered as Buda point on the east and Limni point on the west,
- 40 distant from each other  $1\frac{3}{10}$  miles.

**East shore.—Buda point.**—The promontory forming the east entrance point to Port Mudros has three salient points named Buda, Sangrada, and Meganoros. Buda, with cliffs 15 feet high, is

*General charts 1659, 1087; 2836b.*

*Plan 1661, Port Mudros. Var. 2° 50' W.*

the southern one of these, and has depths over 5 fathoms half a cable off it.

**Sangrada point** is  $3\frac{3}{4}$  cables northward of Buda point; the coast between is irregular, and there are some off-lying rocks nearly midway between and in line with the points. Depths under 5 fathoms extend more than a cable westward from Sangrada point. 5

**Light.**—A light, elevated 35 feet, is shown from a white stone and iron structure, 18 feet high, on the extremity of Sangrada point.

**Meganoros point**, at the back of which is a hill 129 feet high, on which a signal station is established, has cliffs 60 feet high just southward of it. The coast between Sangrada point and it curves slightly to the eastward and north-eastward. Depths of less than 3 fathoms extend for a considerable distance off-shore between these two points. 10 15

**Cape Pavlos**,  $1\frac{1}{4}$  miles north-east of Meganoros point, will be recognised by the town of Mudros, with its large two-towered cathedral, one-third of a mile back from it, and a group of windmills situated on a hill 109 feet high, between it and the town. From Meganoros point the coast trends eastward, and then, gradually turning, trends north-north-west for half a mile to Cape Pavlos, being low, with occasional patches of marshy land, becoming less steep-to, and forming a large bight named Euriance cove. Depths of one fathom and less will be found at an average distance of one cable from the shore of the cove, and the 5-fathoms line skirts it at a distance of from  $1\frac{1}{2}$  cables in the southern portion to  $4\frac{1}{2}$  cables in the northern. 20 25

**Ispatho island** (*Lat. 39° 53' N., Long. 25° 16' E.*), 34 feet high, with some buildings and trees on it, is situated about half a mile northward of Cape Pavlos, and is connected with the mainland by a built causeway; a bank extends from it westward for nearly 2 cables, and depths under 5 fathoms will be found at a distance of  $3\frac{1}{2}$  cables from its western side. 30

From Cape Pavlos the coast trends north-easterly, and then in a west-north-west direction to Talikna point, forming Ormano bay. 35

**Talikna point**, with a rock 3 feet high, three-quarters of a cable northward of it, is part of the leading mark through East pass, and is rocky and conspicuous. The land, of which Talikna point is the termination, attains an elevation of 293 feet at a little less than a mile from the point, southward of which, close to the coast, it partakes somewhat of the same marshy character as that at the head of the port. See page 457. 40

*General charts 1659, 1087, 2836b.*

*Plan 1661, Port Mudros. Var. 2° 50' W.*

**West shore.**—Between Limni and Vrulidhi points the coast is deeply indented by Tarrant and Fuller coves, separated by Stearn point.

- 5 **Shoals.**—There are two patches of rocks in Fuller cove, with less than 6 feet of water over them; the outer patch lies just over one cable north-westward of Stearn point. Depths under 5 fathoms extend for a distance of 3 cables northward of Vrulidhi point.

- Vrulidhi bay**, westward of the point of that name, on which  
10 there are two white beacons with oblong topmarks, extends in a south-westerly direction three-quarters of a mile, with a breadth of 4 cables. There is good anchorage in the middle of the bay in 8 fathoms, mud bottom, but the width of the entrance is contracted to about  $1\frac{1}{2}$  cables between the 3-fathoms lines on each side. The house on the east side  
15 of the bay is a good mark.

**Shoals.**—A small rocky shoal, with a depth of  $2\frac{1}{4}$  fathoms, and Blenheim rocks, on which the sea breaks in southerly gales, lie 3 and 4 cables respectively to the north-westward of Vrulidhi point.

- From the head of Vrulidhi bay the west shore of Port Mudros  
20 trends in a north-easterly direction, with a succession of small points and indentations, for  $2\frac{1}{2}$  miles, and then east-south-eastward for one mile to Kaloyeraki point. Until within 4 cables of the extremity of the latter this shore is fronted by extensive banks, which considerably restrict the navigation.

- 25 There is a conspicuous square tower, 157 feet above the water, on the west shore to the north-westward of Vrulidhi point.

- Alago island** (*Lat. 39° 51' N., Long. 25° 13' E.*), situated to the south-westward of Kaloyeraki point, is  $6\frac{3}{4}$  cables long in a north-east and south-west direction, by  $1\frac{1}{2}$  cables broad, and 80 feet high. There  
30 is a ruined hut on the ridge,  $1\frac{3}{4}$  cables from its north-east end. A small islet, 17 feet high, lies close to its south-east coast.

- Depths under 5 fathoms will be found three-quarters of a cable off this islet, and similar depths at about one cable from the remainder of the island, except off the south-western part, which will be described  
35 more fully under the heading West pass.

- Shoals.**—Channel rocks, on which the sea breaks in southerly gales, lie nearly midway between the south extreme of Alago island and the western shore; depths of less than 5 fathoms extend northward and eastward of these rocks, and the 5-fathoms line skirting the  
40 western shore joins that which encircles Alago island and forms, as it were, a bar, on which the least water is 4 fathoms.

A shoal, with a least depth of  $2\frac{1}{2}$  fathoms, lies about 3 cables eastward from Washington point.

*General charts 1659, 1087, 2836b.*

*Plan 1661, Port Mudros. Var. 2° 50' W.*

**Kaloyeraki point**, 71 feet high, is the eastern extremity of a narrow peninsula nearly 2 miles long; there is a beacon on the summit above the point.

**Coast.**—From Kaloyeraki point the coast trends in a general west-north-westerly direction for  $1\frac{1}{2}$  miles, with three small shallow bays in the first three-quarters of a mile. 5

**Agios Nikolo islet**, 21 feet high, is situated 3 cables northward of Kaloyeraki point; it is surrounded by a reef, towards the eastern end of which is a small rock, 13 feet high, called Anvil rock. 10

**Turk islet**, 26 feet high, lies nearly a quarter of a mile west of Agios Nikolo islet, and is joined to the north side of the peninsula by a built causeway.

**North shore.**—From the head of the long shallow inlet running in on the north-west coast of West Mudros, the north shore of the port trends in a north-easterly direction, with a series of small points and bights,  $2\frac{1}{2}$  miles to Escombe point, where three small streams run into the sea, and off which there is a rocky ledge, the highest part of which is 3 feet above water. The depth of 3 fathoms will be found  $1\frac{1}{4}$  cables from this ledge. 15 20

From here the low coast turns to the eastward and for  $1\frac{1}{2}$  miles is backed by marsh land watered by several streams and fronted by shallow water, not more than  $3\frac{1}{2}$  fathoms being found at an average distance of one-third of a mile. The coast now turns sharply to the south for one-third of a mile to Talikna point. 25

**DANGERS.—Black rocks** (*Lat. 39° 51' N., Long. 25° 14' E.*).—The largest of these is 14 feet high, nearly midway between Sagra point and Alago island, and the group divides East and Middle passes. On the south side the 5-fathoms line approaches to three-quarters of a cable from the largest rock, otherwise they are surrounded by a rocky shoal, which extends  $1\frac{1}{2}$  cables eastward, 2 cables westward, and 3 cables northward. At the northern extreme are some rocks with less than 6 feet of water on them. 30

**Wynne shoal**, on which there is a least depth of  $4\frac{3}{4}$  fathoms, over a rocky bottom, is about half a cable in extent, and lies  $4\frac{1}{2}$  cables south-south-westward from Kaloyeraki point. 35

**Kaloyeri shoal** is a dangerous rocky patch, with  $3\frac{1}{4}$  fathoms of water over it, lying  $3\frac{1}{4}$  cables south-eastward from Kaloyeraki point.

There are two small isolated patches with 5 and  $4\frac{3}{4}$  fathoms over them, situated east south-eastward  $2\frac{1}{2}$  cables, and east-north-eastward 3 cables, respectively, from Kaloyeraki point. 40

**Nikolo patches**, with 3 fathoms of water over the shoalest part, and general depths of  $3\frac{1}{4}$  to 5 fathoms, are two areas of shoal water

*General charts 1659, 1087, 2836b.*



*Plan 1661, Port Mudros. Var. 2° 50' W.*

of considerable size, and extend in a north-easterly direction  $6\frac{1}{2}$  cables from Kaloyeraki point.

- Cameron shoal.**— Nearly midway between Kaloyeraki point and Cape Pavlos on the opposite side of the port, lies an elongated rocky ridge, about  $3\frac{1}{2}$  cables long, with a least depth of  $5\frac{1}{4}$  fathoms over it. About 2 cables further to the southward, there is a small isolated patch on which the depth is  $5\frac{1}{2}$  fathoms.

- Bailey shoals** are a cluster of small shoals lying about  $5\frac{1}{2}$  cables to the westward of Ispatho island, and nearly in the middle of the channel between that island and Kaloyeraki point; depths of  $4\frac{1}{4}$  to 5 fathoms exist on these shoals.

- Carmania shoal** (*Lat. 39° 53' N., Long. 25° 15' E.*), on which there is a least depth of  $4\frac{1}{2}$  fathoms at its south-western end, is  $2\frac{3}{4}$  cables long in a north-westerly and south-easterly direction, and lies about 3 cables north-eastward of Bailey shoals.

- Middle shoals**, with depths of  $4\frac{1}{2}$  to 5 fathoms, are a number of small patches almost in the middle of the northern portion of the port. There are numerous small shoals of similar depth scattered over the whole area of the anchorage water, and these can best be avoided by reference to the chart.

- Depths.**—Roughly speaking, a line joining Talikna point and Agios Nikolo islet marks the northern limit of the depth of 5 fathoms until within  $3\frac{1}{2}$  cables of the latter, when the soundings increase to 6 or 7 fathoms until about 3 cables westward of the islet. Generally speaking, the water shoals very gradually from 5 fathoms towards the shore, but occasionally slightly shoaler areas are met with, and experience seems to show that these are liable to change somewhat frequently.

- East pass**, the channel eastward of Black rocks, has a least breadth between the 5-fathoms lines on either side of 2 cables, and depths of over 15 fathoms in the middle.

- The leading mark through this pass is Talikna point, midway between the two mills on the 97 and 161 feet summits near Talikna village, and just open eastward of the near summit, bearing  $27^\circ$  true; this leads in depths of 10 to 17 fathoms.

- Middle pass.**— The channel between Alago island and Black rocks is just under 2 cables broad between the 5-fathoms lines on either side with a least depth of  $6\frac{1}{2}$  fathoms in the middle.

- The seventh from the west of 12 mills in line with Kaloyeraki point, bearing  $24^\circ$  true, leads through the middle of the pass. See view B on plan.

*General charts 1659, 1087, 2836b,*

*Plan 1661, Port Mudros. Var. 2° 50' W.*

**West pass** (*Lat. 39° 51' N., Long. 25° 13' E.*) is the channel westward of Alago island, the dangers in which are described on page 456, but it cannot be recommended on account of the bar, and the narrowness of the channel. Vessels using this channel should steer to pass midway between Channel rocks and the southern extreme of Alago island, thence as requisite to an anchorage or to the northern part of the port, in which latter case, the north extreme of Alago island should be passed at a distance of about  $1\frac{1}{2}$  cables, and thence between Wynne and Kaloyeri shoals. 5 10

**Anchorage** may be taken up in any part of Port Mudros, clear of the dangers and extensive banks already mentioned, the bottom consisting of sand and mud, but the most spacious anchorage, in from 6 to 10 fathoms, will be found inside the triangle formed by Meganoros point, Cape Pavlos, and the north-east extremity of Alago island, taking care to avoid the shoal water extending from these points, as well as Kaloyeri shoal, and Cameron shoal with the smaller detached shoals in the vicinity. 15

Anchorage westward of Alago island is not recommended; the approach for heavy draught vessels is somewhat intricate, and, in addition, the holding ground in the deep water is not good, being composed of mud over dead coral. 20

The best holding ground appears to be in Euriance cove and Blenheim cove; in the latter, westward of a line joining Agios Nikolo islet and Escombe point, where the mud is stiffer than in other parts of the port. 25

**DIRECTIONS.—East pass.**—Before passing in mid-channel between Limni and Buda points, steer for the largest of the Black rocks, on a bearing  $17^{\circ}$  true, until Talikna point is exactly midway between the two mills (situated south-eastward of Talikna village), and just open eastward of the near summit, bearing  $27^{\circ}$  true. Steer in on this leading mark, which leads midway between the 5-fathoms lines on either side. When the northern extremity of Alago island bears  $292^{\circ}$  true, a vessel may take up a berth as convenient. 30

**Middle pass.**—After passing between Limni (*Lat. 39° 50' N., Long. 25° 13' E.*) and Buda points, bring the southern extremity of Alago island to bear  $350^{\circ}$  true, and steer for it until Sangrada point lighthouse bears  $76^{\circ}$  true, and the seventh from the west of 12 mills is in line with Kaloyeraki point,  $24^{\circ}$  true, which mark follow, until the northern extremity of Alago island bears  $292^{\circ}$  true, when a vessel may anchor as convenient. 35 40

**West pass.**—As already stated, this pass is not recommended, on account of the bar and the narrowness of the channel, but should it

*General charts 1659, 1087, 2836b.*

*Plan 1661, Port Mudros. Var. 2° 50' W.*

be necessary to use it a vessel should approach on a course 299° true, for the conspicuous square tower, 157 feet high, until after passing the southern extremity of Alago island; then bring the 70-foot summit of  
5 the peninsula on the west side of Port Mudros to bear 23° true, and steer for it on this bearing, passing midway between Channel rocks and Alago island. Thence, keeping about 1½ cables from the western and northern coasts of the island, alter course gradually and steer to the southward of Kaloyeri shoal, anchoring as convenient when past it.

10 **Villages.**—Half a mile from the head of the long shallow inlet on the north-west side of Port Mudros (*see* page 457) is the village of Portianos, on the northern outskirts of which is a conspicuous church. Ypsoparago is half a mile north-eastward of Portianos. Sarpi is a mile westward of Escombe point, and farther inland are the villages  
15 of Livadhi and Agrionis.

Talikna village (*Lat. 39° 54' N., Long. 25° 16' E.*) is situated over three-quarters of a mile northward from the point of the same name; a quarter of a mile south-eastward of the village are two hills, 97 and 161 feet high, on which are situated the two windmills which form  
20 part of the leading mark through East pass.

**Supplies** of meat and vegetables can usually be obtained.

**Water** can be obtained from a well about a mile westward of Kaloyeraki point, on the south side of West Mudros peninsula, and from a spring half a mile southward of Washington point.

25 **Telegraph.**—There is telegraphic communication between Mudros and Athens.

*Chart 1659, Lemnos.*

**Coast.**—The south coast of the Phako peninsula, from Kombi point to Cape Stavros, trends in a general westerly direction 4¼ miles; it has some scattered rocks along it, and westward of Phako point (a  
30 tongue of land projecting about 2 cables) the rocks and shallow water extend 1½ cables.

**Praso island**, half a mile to the north-westward of Cape Stavros, and a quarter of a mile from the nearest shore, with a deep  
35 channel half that width between, is foul, and must be given a wide berth.

*Plan of Port Kondia on 3428.*

**Port Kondia** (*Lat. 39° 50' N., Long. 25° 10' E.*), westward of Mudros bay and north of Cape Stavros, is a narrow inlet about 2 miles  
40 deep in a north-easterly direction, with anchorage at its head in 10 to 7 fathoms, mud, open to the south-west. The width of the entrance is about 4¼ cables. The inner points are foul, and a mid-channel course should be preserved, the deep channel being little more than

*General charts 1659, 1087, 2836b.*

*Plan of Port Kondia on 3428. Var. 2° 50' W.*

2 cables wide at the inner part, with a depth of 14 fathoms in the middle.

The village of Kondia is a little more than two-thirds of a mile northward of the head of the port, where a river, dry in summer, runs into the sea, passing through a low-lying cultivated plain; there is a Custom house (white) on the north-east shore, close to the police barracks, which are conspicuous.

At 2 cables eastward of the mouth of the river is the entrance to a narrow channel leading to a shallow salt lagoon about a cable inland, with low sandhills between it and the port. There is good landing for boats at the entrance to this channel and at the river's mouth; another landing place is on the west side, in a little cove  $3\frac{1}{4}$  cables south-westward of the mouth of the river.

Conspicuous objects are, a grey rock, 30 feet high, by the channel leading to the lagoon, and a high square tower about a mile north-eastward of the rock.

Shoal water extends  $1\frac{1}{2}$  cables from the north shore of the port, and nearly a cable from the east side; two bights on the south side are very shoal, the eastern being foul; close outside the shoal edge the depths are 5 and 6 fathoms.

Port Kondia is separated from Mudros bay by an isthmus about a quarter of a mile across, which unites the peninsula of Mount Phako (1,106 feet high) to the main.

The best anchorage is in about 9 fathoms of water, with the Custom house (white) bearing  $65^\circ$  true, distant  $4\frac{1}{2}$  cables. Small native craft anchor close in near the Custom house.

*Chart 1659, Lemnos.*

**Temporary anchorage.**—There is temporary anchorage for small vessels with off-shore winds in the bay next west of Port Kondia, but a solitary rock, one foot high, lies in the middle, and must be avoided.

*Plan of Kastro on 1891.*

**Cape Tigani** (Lat.  $39^\circ 49'$  N., Long.  $25^\circ 03'$  E.).—Mount Stivi, at the south-western extreme of Lemnos, is a rugged conical hill, 530 feet high; at its base, on the south-west, is the small bay of the same name, about 2 cables deep, with from 2 fathoms to one fathom water, and open to the south. Cape Tigani is the south extreme of a little islet, lying 2 cables south-westward of the west point of Stivi bay, with rocks above and below water between it and the shore; the cape is  $4\frac{1}{2}$  miles west-north-westward from Cape Stavros; on its eastern side, and in front of Stivi bay, is Stivi rock, awash.

**Tigani rock.**—At  $1\frac{3}{4}$  cables southward from Cape Tigani is the rock of the same name, with 3 feet water on it, 13 fathoms between

*General charts 1659, 1087, 2836b.*

*Plan of Kastro on 1891. Var. 2° 50' W.*

it and the cape, and 15 fathoms close to its southern side. Vessels rounding Cape Tigani should give it a berth of half a mile.

- Thevates islets.**—The western coast of Lemnos is irregular, with several little bays and projecting points, backed by elevated hills. At about  $1\frac{3}{4}$  miles northward of Cape Tigani are the two small islets of Thevates, united to each other and to the little promontory of the same name by shoal rocky ground.

- Cape Thevates** and the isthmus which joins it to the main form the western side of Port Plati; the cape is surrounded by rocks, which extend south-east and eastward into the bay a quarter of a mile.

- Port Plati** is a nearly circular bay, about half a mile in diameter, with from 9 to 3 fathoms water, mud bottom. The entrance is nearly a quarter of a mile wide, with 10 fathoms water between the shoals on either side. The village of Plati is half a mile inland.

- KASTRO.**—From Thevates islets the coast trends north-eastward to two little rocky points which are foul to a cable off; the northern of these points is 9 cables from Thevates islets, and forms the south entrance point of a bay about 3 cables wide, nearly in the middle of which is a rock with 3 feet water on it. In the north-eastern corner is a little pier-harbour for vessels of very light draught. On the north side of the bay is a steep rugged peninsula mass, one-third of a mile in extent, on which is the castle, 409 feet high, which being white is conspicuous.

- Shoal.**—A  $4\frac{1}{4}$  fathoms patch lies in the entrance to the bay at 3 cables south-south-westward of the western extreme of the peninsula. A conspicuous minaret near the north-eastern mole, bearing  $68^\circ$  true, leads southward of it.

- LIGHT** (*Lat.  $39^\circ 52'$  N., Long.  $25^\circ 03'$  E.*).—A light, elevated 243 feet above the sea, is shown from a white metal column, 15 feet high, on the western extremity of the outer wall of the castle at Kastro.

- Anchorage.**—The best anchorage is in about 10 fathoms, with the northern of two windmills on a hill to south-eastward of the town bearing  $100^\circ$  true, and Kastro point  $343^\circ$  true; but the holding ground, sand, is not good, and a vessel must be prepared to proceed to sea directly the wind shifts to the westward.

- Town.**—On the isthmus and shore north and south of it is Kastro (ancient *Myrina*), the chief town and seat of government of Lemnos island, with a population of about 3,000. When bearing  $142^\circ$  true it appears conspicuous and imposing.

**Telegraph cables.**—Lemnos island is in telegraphic communication with the rest of the world by means of two cables landed on

*General charts 1659, 1086, 1087, 2836b.*

*Plan of Kastro on 1891. Var. 3° W.*

the north side of Kastro, one being laid to Saloniki, the other to Tenedos island; Kastro has a telegraph office, situated near the north-eastern mole.

**Coast.**—The coast between Kastro and Cape Petasi, about half a mile northward, forms another bay somewhat similar in shape to that south of Kastro, but larger. There is a conspicuous windmill on a small point in the middle of the head of the bay. Kastro peninsula and Cape Petasi are steep-to, but the rest of this bay has depths under 5 fathoms extending from one to 2 cables from its shores. North-eastward,  $1\frac{4}{10}$  miles from Cape Petasi, is Mount Athanasi, 1,085 feet high, with a building on it, within half a mile of the shore. Between the base of the mount and Cape Petasi, and half a mile from the latter, are the two detached Skylax rocks above water, and close to the shore. See view of the western side of Lemnos on plan.

**Kastro ledge**, a cable in diameter, with 5 fathoms water on it, lying  $8\frac{1}{2}$  cables west-north-westward of the outer extreme of Kastro peninsula, is a dangerous obstruction for a heavy-draught ship. There are 20 fathoms water between it and the peninsula. The conspicuous mill on the shore of the bay north of Kastro bearing south of  $98^{\circ}$  true leads northward of the ledge.

**Petasi ledge**, with 6 fathoms on it, lies a quarter of a mile north-westward from Cape Petasi, with deep water between.

*Chart 1659, Lemnos.*

**Kaloyeri point**,  $2\frac{3}{4}$  miles northward from Cape Petasi, has a reef extending from it a quarter of a mile in a north-westerly direction, close to which the water is deep.

**Cape Murtzephlos** (*Palæo Kastro*) (*Lat.  $39^{\circ} 59'$  N., Long.  $25^{\circ} 02'$  E.*), the north-western extreme of Lemnos, 3 miles farther north, is a conical hill connected to the land within it by a low isthmus; southward of it are some yellow cliffs. Mount Skopia, the greatest elevation in Lemnos, 2 miles eastward of Cape Murtzephlos, is 1,410 feet high, and half a mile from the north coast.

**Siderites island.**—At  $4\frac{1}{4}$  miles east-north-eastward from the cape, is the island of Siderites, or Kaseno, two-thirds of a mile in average diameter, high, bold all round, and separated from Cape Agrillia by a passage half a mile wide and deep with the exception of a 3-fathoms shoal near the cape. See view on chart 1659.

**Cape Pharaklo**,  $4\frac{1}{2}$  miles farther eastward, is skirted by rocks which extend off more than a cable; the coast between is broken, with cliffs and sandy bays, and the western part is bordered by rocky ground.

*General charts 1659, 1086, 1087, 2836b.*

*Plan of Purnea bay on 1891. Var. 2° 50' W.*

**PURNEA BAY**, between Capes Pharaklo and Soteri, which are 6 miles apart, is 4 miles deep. At the head of the bay is Port Purnea, and thence the distance across the land to Port Mudros on the south is little more than 2 miles, the island being nearly divided into two parts.

**Tree point.**—The western shore of Purnea bay is composed of small rocky points and coves, and at about halfway in, Tree point, an irregular projection, extends beyond the line of coast more than half a mile, with a reef stretching from it 2 cables. There are anchoring depths, in from about 8 to 16 fathoms, all over the head of the bay, but exposed to the north.

**Port Purnea** (*Lat. 39° 56' N., Long. 25° 18' E.*), in the southern part of the bay, is  $1\frac{1}{4}$  miles in extent east and west, about two-thirds of a mile north and south, and has in the deepest part 7 fathoms water, sand and mud bottom. It is partly protected from the north by Cape Purnea, a point projecting eastward which covers the shallow water  $1\frac{1}{2}$  to 3 fathoms in depth, extending over all the western side of the port. The deeper part, with depths from 4 to 7 fathoms, is exposed to the north, though a 2-fathoms spit, extending half a mile westward from the eastern entrance point, affords some shelter from the sea. The anchorage space covers an area of about half a mile; the passage into the port is  $1\frac{1}{2}$  cables wide, close to Cape Purnea, and between it and the tail of the 2-fathoms spit extending from the eastern entrance point. See view of north coast of Lemnos island on plan.

**Port Ekato Kephales**, on the eastern side of Purnea bay, is very similar to Port Purnea; it has depths of from 7 to 2 fathoms water, but is encumbered midway between the entrance points by a shoal with  $1\frac{3}{4}$  fathoms of water, and outside it another with  $3\frac{1}{2}$  fathoms. The passage in is between these shoals and the projecting south-west entrance point.

*Chart 1659, Lemnos.*

**Cape Soteri**, 251 feet high, the eastern point of Purnea bay, is clifty, and extending from its western extreme are the remains of an ancient mole. Shallow water extends off 2 cables from the north-eastern face of the cape, and it should not be approached too near. The cape is about  $3\frac{1}{2}$  miles west-south-westward from Cape Plaka, the north-eastern extreme of Lemnos. Between them is a deep bight, in which shoal water extends from 2 to  $4\frac{1}{2}$  cables from the shore.

**CAPE PLAKA**, the north-eastern extreme of Lemnos, is a steep bold headland, level on the top, and surrounded by a rocky bank, which extends off nearly 3 cables. See view on chart 1659.

*General charts 1659, 1087, 2836b.*

*Chart 1659, Lemnos. Var. 2° 50' W.*

**LIGHTS** (*Lat. 40° 02' N., Long. 25° 27' E.*).—From a white masonry tower, 74 feet in height, about  $1\frac{1}{2}$  cables within the north-east extremity of Cape Plaka, two lights are exhibited. The main light is elevated 164 feet, and the auxiliary light 105 feet, above sea level.

**Coast.**—Half a mile southward of Cape Plaka is a steep cliff, and 9 cables south of the latter is another cliff at the termination of a tongue of land named Voria Kastro, from the ruin on it; the coast between the two cliffs forms a bay. Thence, southward for 2 miles to Petza point, the coast declines in height, and is succeeded by a low sandy shore, which continues south-westward to Kharos point, a distance of 5 miles farther. Within the sandy shore is Megali Limni, a shallow salt-water lake with an area of about 2 square miles, and separated from the sea by a narrow strip of land.

**Kharos point** is small, clifty, and surrounded by shallow rocky ground, which extends upwards of a mile south-eastward; it forms the northern point of a bay named Port Kharos or Kokino. Between Port Kharos and Cape Irene, the southern extreme of Lemnos, about  $6\frac{1}{2}$  miles southward, are three other bays, separated by projecting clifty points. In any of these bays a vessel will find temporary anchorage during a westerly gale. Mount Parathis, 859 feet high, is situated  $1\frac{3}{4}$  miles within the shore of the central bay; two-thirds of a mile south-east of it is Mount Panagia, 820 feet high, whence the land declines in height to Cape Irene. *See page 453.*

**KHAROS BANK.**—Fronting the northern half of the eastern side of Lemnos, and extending 10 miles from the coast, are extensive shallow flats and rocky patches, on many of which there are only from 3 to  $1\frac{1}{2}$  fathoms water. The outer of these dangers are named Anatoli and Kinduno patches, and Kharos reef, the whole being known as Kharos bank.

From the shore, 2 miles northward of Kharos point, a very shallow tongue stretches off in a south-easterly direction  $2\frac{1}{2}$  miles, terminating in a reef with less than 6 feet water upon it, which breaks, situated  $2\frac{1}{4}$  miles east-north-eastward from Kharos point.

**Kinduno patch**, with 4 fathoms on it, lies  $4\frac{6}{10}$  miles eastward from Kharos point, on the south side of Kharos bank and just inside the 10-fathoms line. Between this patch and the 5-fathoms line from the shore the distance is nearly  $1\frac{1}{2}$  miles, and depths from 5 to 8 fathoms. Kinduno patch is also divided from the eastern part of the bank by a distance of  $1\frac{3}{4}$  miles, and depth of 7 to 12 fathoms.

**Kharos reef** (*Lat. 39° 55' N., Long. 25° 34' E.*), with only  $1\frac{1}{2}$  fathoms of water on it, occupies the western end of a cluster of patches having less than 3 fathoms on them, nearly a mile in extent

*General charts 1659, 1087, 2836b.*



*Chart 1659, Lemnos. Var. 2° 50' W.*

east and west. This shoal bears 81° true, distant 7½ miles from Kharos point.

**Anatoli patches** is the name given to two 3-fathoms spots at the outer end of Kharos bank. They lie north-north-west and south-south-east half a mile distant from each other, the eastern patch bearing 80° true, distant 9¼ miles from Kharos point. It also lies 8¾ miles south-eastward from Cape Plaka lighthouse.

**A bank**, with 6 fathoms on it, lies  $1\frac{8}{10}$  miles south-south-eastward from the southern Anatoli patch. Depths under 10 fathoms extend one mile from eastward to southward of the southern, and three-quarters of a mile eastward and north-eastward from the northern Anatoli patch.

**At night** the Kharos bank is covered by a sector of red light from Cape Plaka lighthouse.

**Caution.**—Kharos bank is generally recognised during day by the colour of the bottom; but it should be given a wide berth, as southward of the bank the current sets northward. See page 478.

See also Caution on page 453.

*20 Charts 1599, 1608, 1665. Var. 2° 30' W.*

**CAPE ESKI STAMBUL.**—From the mouth of the River Tuzla (see page 450) the coast of Anatolia continues northward 10 miles to Cape Eski Stambul, and is mostly a sandy beach, behind which the mountains of Kaz and Chigri rise respectively 1,595 and 1,648 feet high.

*Chart 1599, Cape Eski Stambul to Kum Kale.*

Cape Eski Stambul is a small sandhill of moderate height, inclining a little to the westward, on which is the village of Talian, erected mostly on the ruins of the ancient town of *Alexandria Troas* (or *New Troy*), founded by Alexander the Great.

Numerous antiquities are to be seen to this day, not far to the eastward of this village, of which the most remarkable are the remains of a large theatre, the ruins of a palace, an aqueduct, mineral water baths, and a large outer wall. The port of *Alexandria Troas* is at the present time entirely filled up and separated from the sea by a strip of low land. It was a basin 400 feet in length, by 200 in breadth.

**SUFFREN SHOALS** (Lat. 39° 46' N., Long. 26° 08' E.).—Cape Eski Stambul is surrounded by a bank of rock and sand, which extends 1¼ miles north-north-westward and one mile north-westward, and on the outer part of which there are only 2¼ fathoms water and 1½ fathoms about one-third of a mile from the shore, at the same distance north-eastward of the cape. These dangers are named the Suffren shoals, the south-west side of which runs north-westward for the distance of one mile from the cape; the farthest out part of the

*General charts 1608, 1087, 2836b.*

*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

shoals, with depth of 3 fathoms, lies north-north-west  $1\frac{2}{10}$  miles from Cape Eski Stambul.

To pass westward of them keep the gap just inside Paleo Kastro open of Yukyeri point, bearing eastward of 9° true. (See views on charts 1599, 1608.) A good mark is not to stand farther towards the shoal than just to open the little islet of Drepano (one of the Rabbit islands) eastward of Gadaro. When Cape Marmara of Tenedos bears about 270° true, and is in line with Galley point, a vessel will be well northward of the shoals, and may keep nearer the mainland shore where there will be less current. 5 10

**At night,** Gadaro island light should be kept bearing northward of 350° true until northward of Suffren shoals. For continuation of this coast see page 470.

**TENEDOS ISLAND,** called by the Turks Bokcha adasi, is nearly 6 miles in length in a west-north-west and east-south-east direction, and its eastern and broadest part is 3 miles across. At a little more than one-third of a mile within Mela point (*Lat. 39° 51' N., Long. 26° 04' E.*), the north-eastern extreme of the island, is Mount Elias, a conical hill 625 feet high, conspicuous from the westward. At about 6 cables east-south-eastward of Mount Elias is another hill, named Sana, 385 feet high, with a monastery on its summit; the other parts of the island are of moderate elevation, and decline in height towards the western end. 15 20

**Products.**—The island produces corn, cotton, oil, and wine; the latter has always been held in great estimation. 25

**Population.**—The population of the island is about 4,200, one-third being Mohammedans.

**South-west coast.**—Galley point and Cape Marmara are the two southernmost points of Tenedos island, lying on the same parallel. Galley point, the eastern of the two, is the extremity of a narrow peninsula extending southward about a quarter of a mile, and Cape Marmara, 4 cables to the west, is rounded and cliffy, with a small hill over it. Both points are steep to within half a cable. From Cape Marmara the coast trends west-north-westward for about  $3\frac{2}{3}$  miles to Agios Dimitri point and then north-westward nearly  $1\frac{1}{3}$  miles to Ponente point, the western extreme of the island. The whole of this coast is very broken, and foul ground extends off the shore in places for a distance of nearly half a mile. 30 35

**Anchorage.**—The best anchorage under the south-west coast of Tenedos island is reported to be about  $1\frac{1}{2}$  miles north-west of Cape Marmara, and southward of the tumulus marked on the chart. The holding ground is mud and sand; there is a good natural landing place here. 40

*General charts 1608, 1087, 224, 2836b.*

*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

**PONENTE POINT.—LIGHT** (*Lat. 39° 50' N., Long. 25° 58' E.*).—A light is shown, at an elevation of 72 feet, from a white masonry tower, situated on the southern headland of Ponente point.

- 5 **North coast.—Kheraki.**—At about  $1\frac{1}{2}$  miles east-north-eastward of Ponente point, and about 3 cables from the shore, is the islet of Kheraki, with a rock above water close to its north-east side. Kheraki islet lies on a shoal bank which, within the depth of 3 fathoms, extends two-thirds of a mile from the shore.

- 10 **SHIMAL BANK.**—Northward of Kheraki is a large and rocky bank named Shimal bank, with shoal patches, on which the depth varies from 5 to  $2\frac{1}{2}$  fathoms. These rocky shoals form round the western end and northern coast of Tenedos a series of dangers extending  $1\frac{1}{10}$  miles west-north-westward,  $1\frac{1}{4}$  miles northward, and nearly  
15 3 miles north-eastward of Ponente point, and great care should be taken to avoid them.

**Shimal rock**, with  $2\frac{1}{2}$  fathoms of water over it, lies near the north-east edge of Shimal bank,  $48^\circ$  true, distant  $2\frac{6}{10}$  miles from Ponente point.

- 20 The northern edge of the ruined village of Yeni shehr, in line with the south-eastern side of Mavro island,  $56^\circ$  true, leads north-westward of Shimal bank.

Gadaro islet, three times its length open north-eastward of Petro islet, the latter bearing  $121^\circ$  true, leads northward of Shimal rock.

- 25 **Streblos islet.**—At  $3\frac{1}{4}$  miles eastward of Ponente point, and 3 cables from the shore, is Streblos islet, situated on a rocky bank, which extends for two cables outside the islet; half a mile north-westward of the islet is the outer of a chain of rocks with less than 6 feet water on them, extending two-thirds of a mile from the shore  
30 in a northerly direction, with shoal water a cable farther out.

- Talbot rock**, nearly one mile eastward of Streblos, is the summit of a rocky shoal nearly a quarter of a mile in length in a north-north-east and south-south-west direction, and the least water on it is 3 feet. The shoal is steep-to on its northern and western sides, its outer  
35 edge being 4 cables northward of Mela point, the nearest shore.

**Petro islet.**—This small rock or islet, a third of a mile north-north-eastward from Mela point, the north-eastern point of the island, has a depth of 4 to 5 fathoms around it.

*Plan of port and town of Tenedos on chart 1608.*

- 40 **Port Tenedos** (*Lat. 39° 50' N., Long. 26° 05' E.*).—The little port of Tenedos, on the north-eastern side of the island, can accommodate small vessels only; it is formed by a curve in the shore and a mole projecting one cable eastward from the peninsula of Ku

*General charts 1608, 1087, 224, 2836b.*

*Plan of port and town of Tenedos on chart 1608. Var. 2° 30' W.*

castle on the north, which shelters it from the northerly winds (Tramontanes), usually so violent in the archipelago. The depth gradually decreases from 6 fathoms at the entrance to one fathom near the beach at the head, and the bottom is sand and weed. A small vessel may find a berth just south of the mole, and as far in as her draught will admit. 5

Large vessels may anchor about 2 cables eastward of the mole head, in about 9 fathoms, sand and weed. This anchorage, though affording shelter from west, south, and south-westerly winds, is much exposed to north and north-easterly winds, and vessels should be prepared for the sudden shifts of wind to the north-east, which are frequent and dangerous in the winter. As the current nearly always runs to the southward, vessels rarely swing with their heads in that direction, even with a breeze from that quarter. 10 15

*Chart 1599, Cape Eski Stambul to Kum Kale.*

**The best anchorage** for vessels of war is in 12 fathoms, with Tar point bearing 240° true, and Gadaro lighthouse 352° true.

*Plan of port and town of Tenedos on chart 1608.*

**Tenedos town**, at the foot of Mount Sana, is small, with a population of about 4,000; the houses are almost all built of wood and surrounded by gardens. It is defended by Ku castle, a white fort, on which the Turkish flag flies. The town is of small commercial importance. 20

**Supplies.**—Water and small supplies of provisions may be obtained. 25

**Trade.**—The exports consist principally of wine and raisins.

**Communication.**—The town of Tenedos is a telegraph station. The telegraph office is open always.

**Telegraph cables.**—At about 200 yards south-west from the extremity of the southern point of Port Tenedos four telegraph cables are laid, two of which trend southward, passing about  $1\frac{1}{2}$  cables from Oinos point; one, after skirting the south-eastern coast of Tenedos at about one cable distant, is connected with Lemnos, the other with Khios. Two cables are laid in an easterly direction for about a mile, and thence between Gadaro islet and Ocean rock; one being continued in a north-north-westerly direction, passing about one mile westward of Praso islet and thence northward and eastward into the Dardanelles at Chanak. The other is landed in a cove at the southern end of Bashika bay. Vessels anchoring at Tenedos should avoid the neighbourhood of these cables. 30 35 40

*Chart 1599, Cape Eski Stambul to Kum Kale.*

**Tar point** (Lat. 39° 49' N., Long. 26° 05' E.).—The coast between Port Tenedos and Tar point, three-quarters of a mile southward,

*General charts 1608, 1087, 224, 2836b.*

*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

is broken, with cliffy points, and is bordered by shoal ground extending off  $1\frac{3}{4}$  cables, on which, midway between the port and Tar point, is a small islet about a cable from the shore.

- 5     **Shoal.**—At a quarter of a mile southward of Tar point, and about the same distance from the shore to the westward, is a shoal about a cable in extent, on which the depth is 4 fathoms, weed.

- 10     **Oinos point**, nearly  $1\frac{1}{4}$  miles southward of Tar point, is the easternmost point of Tenedos island; the coast between forms several small shallow bays, separated by rocky points, and is bordered by shoal water. Oinos point is steep to on the east, but shoal water extends more than a cable northward from it. Hence a broken coast, bordered by a narrow fringe of shoal water, trends south-westward  $1\frac{1}{4}$  miles to Galley point.

- 15     **TENEDOS CHANNEL.**—Northward of Suffren shoals (page 466) the passage between Tenedos and the mainland is wide and clear. The coast between Cape Eski Stambul and Yukyeri point (*Lat. 39° 50' N., Long. 26° 09' E.*), nearly 5 miles to the northward, forms an inward curve, where vessels when working to the northward  
20 will avoid the sea, but care should be taken not to stand too close to the shore, which is bordered all along at a distance of more than one-third of a mile with shallow water. The depth in the channel is generally from 15 to 7 fathoms, and the nature of the bottom varies in different places. See view opposite.

- 25     **Anchorage.**—Vessels may anchor off any part of the coast in calm weather, but with fresh north or north-westerly winds it would be prudent to anchor in Yukyeri bay, southward of the point of this name, at about three-quarters of a mile from the shore, in 7 fathoms, mud and sand, with Gadaro islet about 297° true, and Yukyeri point  
30 bearing 348° true, or, if necessary, a little farther in.

- Abreast of this roadstead is a vast forest of oak trees, the timber of which is used for shipbuilding. In the neighbourhood of Alexandria Troas is the stunted oak which produces the valonia, the kernel of which is cooked and eaten, and the shell used for tanning and  
35 dyeing.

**Current.**—The current in Tenedos channel sets to the southward from  $1\frac{1}{2}$  to 2 miles an hour. The navigating officers of H.M.S. *Polyphe-mus* remarked in 1894 that with moderate north to north-north-east winds the velocity was checked.

- 40     **Yukyeri shoals.**—Yukyeri is a low salient point, and between it and Tenedos mole the distance is  $2\frac{3}{4}$  miles, but the channel is narrowed by Yukyeri shoals, Ocean rock, and Gadaro islet, with passages between them. Yukyeri shoals, which entirely surround Yukyeri point, are composed of sand and rock, with from 4 to 2 fathoms water

*General charts 1608, 1087, 224, 2836b.*

To face page 470.]



*Gadaro, Marro.  
bearing 340° true.*

*Imbros I.  
Tenedos channel.*

*C. Marmara. Tenedos island. Mt. Elias.*



*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

on them, and extend one mile north and south, and the same distance to the westward. Petro islet, touching the south side of Gadaro islet, 292° true, leads southward of Yukyeri shoals.

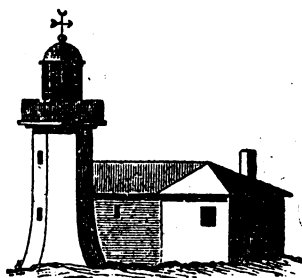
**Ocean rock.**—This rock lies  $1\frac{1}{2}$  miles westward of Yukyeri point, and is about 6 cables east-north-eastward of Gadaro islet; it has  $2\frac{3}{4}$  fathoms on it, and 3 and 4 fathoms at the distance of  $1\frac{1}{2}$  cables, on a sandy shoal all round it. The edge of this shoal is only  $1\frac{1}{2}$  cables from that of Yukyeri shoals, and in the narrow channel between there are  $5\frac{1}{2}$  to 7 fathoms water; at about 6 cables south-eastward of Ocean rock, there are shoal patches of 5 fathoms.

This channel is not recommended, from the difficulty of recognising the edges of the shoals on either side, but a vessel of light draught using it should keep the south-eastern end of Tenedos island bearing about 209° true. The three mills at the south-eastern end of the town of Tenedos, touching the north-west side of Gadaro islet, 241° true, or open north of it, lead northward of Ocean rock and Yukyeri shoals.

**Gadaro islet** (*Lat. 39° 50' N., Long. 26° 06' E.*) and Little Gadaro are about one cable apart, and lie on a rocky shoal,  $3\frac{1}{4}$  cables in length east and west; both have a red appearance. Gadaro, the larger and easternmost, is nearly circular, three-quarters of a cable in diameter, and about 30 feet high, with a lighthouse on it. Gadaro islet is 9 cables east-north-eastward from Tenedos mole, and nearly 2 miles westward of Yukyeri point; between the shoal surrounding it, and that of Ocean rock, is a passage one-third of a mile wide, and from 10 to  $5\frac{1}{2}$  fathoms deep.

**Little Gadaro** is a mere rock, and the channel between it and Tenedos is  $7\frac{1}{2}$  cables wide, and from 13 to 8 fathoms deep, the bottom being sand and weed.

**LIGHT.**—A light is exhibited, at an elevation of 59 feet, from a white tower, and white building with red roof, 29 feet high, on Gadaro islet.



Gadaro islet lighthouse.

**BASHIKA BAY.**—From Yukyeri point the coast trends northward a little easterly,  $4\frac{1}{2}$  miles to Paleo Kastro or Bashika point, and is for the greater part cliffy and backed by hilly land. Bashika bay is formed by a curve in the coast southward of the latter point, and for  $1\frac{1}{2}$  miles in that direction the shore is low with a marshy plain within it, and bordered by shallow water, which, at about one-third of a mile southward of Paleo Kastro, extends off  $4\frac{1}{2}$  cables. Achi

*General charts 1608, 1087, 224, 28366.*



*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 40' W.*

Baba, north side of Dardanelles entrance, in line with Demetrios point tumulus, bearing 26° true, leads westward of the shoal ground off Bashika point.

- 5 **Telegraph cable.**—The telegraph cable from the town of Tenedos is landed on a beach  $1\frac{9}{10}$  miles northward of Yukyeri point; the landing place near the cable-house is indicated by a stone pillar; vessels should avoid anchoring near the cable.

- Paleo Kastro, or Bashika point** (*Lat. 39° 55' N.,*  
10 *Long. 26° 09' E.*), on which are remains of the old castle only a few feet above the ground, is a small rounded bluff with the upper edge of the cliff 30 yards within the base, which is fringed all round at a distance of 25 yards by a rocky ledge and large boulders. From the inner edge of the bluff, Paleo Kastro slopes down gradually to the  
15 eastward or land side for about 100 yards, where it forms a dip or valley, with a spur from Bashik Tepe. *See view opposite.*

- Bashik Tepe, an artificial conical mound, nearly half a mile east-north-eastward of Paleo Kastro, is a good mark; Ujek Tepe, another artificial conical mound or tumulus, 284 feet high, nearly  $1\frac{3}{4}$  miles  
20 eastward of the head of the bay, is also conspicuous. The hilly land west-south-west of Ujek Tepe terminates at the sea in white cliffs, with sandy beach between them. A fort, 75 feet above the sea, stands about  $1\frac{1}{4}$  cables southward of the northern end of the white cliffs, and there is a ruined fort half a cable northward of it. At  
25 one-third of a mile southward of the southern fort and close to the shore is situated a building formerly known as the Admiralty picket-house.

- Anchorage.**—Bashika bay is considered a safe summer anchorage, but the holding ground in some places is uncertain, and as several  
30 of H.M. ships have dragged their anchors during winds both from N.N.E. and S.S.W., great attention is required when lying here. Vessels may anchor where convenient, but a berth recommended is in 10 or 11 fathoms water, mud bottom, with Seddul Bahr just open of Paleo Kastro; Ujek Tepe or tumulus on the plain, open north-  
35 ward of the white cliffs about 79° true; the south-western extreme of Phido islet, about 297° true; and Gadaro lighthouse 215° true, about three-quarters of a mile from the shore. Small vessels may obtain shelter from northerly winds by anchoring in 5 or 6 fathoms, distant 3 or 4 cables from the shore. The water is sufficiently clear at times  
40 to admit of the cable being seen on the bottom in a depth of 8 or 9 fathoms.

The bay is a good place for boat sailing, for though the wind is often high, there is not generally too much swell or current. Snipe are to be shot in great numbers after August, fine cock after November, fol-

*General charts 1608, 1087, 224, 2836b.*

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Bashika point bearing  $176^{\circ}$  true, 4 miles.



*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

blowing north or north-easterly winds, and in the cover round the cultivated patches; hares are also abundant and large duck and geese also come in with the hard weather. A north-easterly gale in December, 1876, brought in a large flight of woodcock.

5

**Current.**—In the outer part of Bashika bay (*Lat. 39° 53' N., Long. 26° 09' E.*) the current at times runs to the southward at the rate of  $1\frac{1}{2}$  and occasionally 2 knots an hour, but its strength is less inshore, and occasionally an eddy sets to the northward. It is much influenced by the force and direction of the wind.

10

**Winds.—Gales.**—Strong gales from the west and north-westward are not of long duration, and during a gale from the westward, in December, 1849, H.M. Ship *Caledonia* experienced an undertow setting from the shore, which caused the ship to ride without much strain on her cables.

15

The worst gales are from the north-east; southerly gales often blow with violence, but the anchorage is partially sheltered from the latter by the island of Tenedos, and they usually terminate by shifting to the W.N.W. and N.W. During the months of June to October, 1853, the wind prevailed from the north-east, and was usually moderate enough for boats to water. Captain Bowden Smith, of H.M.S. *Hercules*, in 1876, writes:—"For the first two days after our arrival at Bashika we had a fresh breeze from the S.W., but on the 29th May it commenced to blow hard from North and N.N.E., and from early in June till the 9th September the strong breezes were nearly always from the N.N.E. These winds, though fresh and sometimes fiery during the day, usually went down in the evening, the nights being generally calm.

20

25

"Thunderstorms and the usual Mediterranean squalls were experienced during the months of June and July. For the greater part of October and the first part of November the prevailing winds were still northerly, but from the 27th November to the 22nd December there was a great prevalence of southerly winds and mild weather, and on the last-named day, and also on the 23rd, it blew a gale from S.S.W. During this gale the *Triumph* dragged her anchor three times, though having 100 fathoms of cable out; it was thought the anchor could not have bitten properly ere the gale commenced.

30

35

"On the 27th December, after a day's light wind with rain, it commenced to blow from the N.E., which freshened to a heavy gale with violent squalls, and lasted three days. Although the force of the wind was quite 10 in the squalls, the sea was not heavy, and the ships rode it out well with two anchors down and steam up. Snow fell on the 28th, but afterwards the weather became mild. Though the breezes were usually stronger from the N.E. than from the S.S.W., the latter caused a more unpleasant sea for landing.

40

*General charts 1608, 1087, 224, 2836b.*

*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

“As strong winds from west or north-west were not experienced, I cannot say how ships would ride out a breeze from that exposed quarter, but my own impression is they would not suffer, and wind  
5 from these points of the compass is said to be rare.

“**Climate.**—The climate during the summer has been all that could be wished for; though the sun during the day was powerful, the heat was never oppressive, and the nights always cool and fresh. No bad effects have been felt from the large marsh in the neighbourhood,  
10 and the health of the men has been excellent. This may partly be attributed to the entire use of distilled water, as the British fleet at Bashika in 1853 suffered severely from fever. There was a marked difference in the temperature at Kavala, or places on that shore, where we found the nights oppressively hot, whilst at Bashika it would be  
15 comparatively cool.

“**Water** may be obtained from the river which runs into the north-eastern part of the bay; with favourable weather, an engine, and a sufficient length of hose, 30 tons a day can be obtained, but the approach to the beach is shallow, and watering with boats which have  
20 to lie a long way out is irksome and tedious, besides the risk of fever. On the arrival of the British fleet, in 1876, water was procured from the river, but afterwards, owing to impurities which got into it, recourse was had to condensing.”

**Supplies** of fresh meat, bread, and vegetables can be obtained at  
25 Bashika bay at reasonable prices.

**RABBIT ISLANDS** (ancient *Lagussæ*), called by the Turks Tacohan adasi, are a group of four islands or islets, with several shoal rocky patches around them, extending over a distance of about  $3\frac{1}{2}$  miles in a north-west and south-easterly direction. Phido, the  
30 south-eastern islet, is nearly 3 miles from Paleo Kastro, the nearest point of the coast; and the passage between the islands and the shoals bordering the north coast of Tenedos is rather less than 4 miles.

**Mavro** (*Lat. 39° 56' N., Long. 26° 04' E.*), the largest of the group, is one mile in length east and west, and 4 cables in breadth,  
35 with its highest part, 138 feet, at the western end, where it is clifty. Cliffs extend along the south-east side of the island for about 3 cables from the south point, and on top of the cliff, at 2 cables from the point, is a cairn. There is a landing pier just eastward of the south-west point. On the north side, half a mile from the east point, and  
40 near the sea, is a well, southward of which are a chapel and a farm.

The island is surrounded by rocks close in, and by shoal water, which, within the depth of 4 fathoms, extends from one to  $2\frac{1}{4}$  cables from the shore on the south side, upwards of 5 cables south-westward from the south-west point, and about one cable from the west side;

*General charts 1608, 1087, 224, 2836b.*

*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

on the north side shoal water within the same depth extends from one to nearly 9 cables, and from the eastern point less than a cable. On the south side, half a mile eastward of Praso islet, a narrow spit, with  $4\frac{1}{2}$  fathoms on it, extends southward from the shoal water to a distance of 4 cables from the shore. 5

**Praso islet**, about  $1\frac{1}{2}$  cables in extent, is 22 feet high, and lies a quarter of a mile off the south-western end of Mavro, to which it is connected by a reef or line of breakers ; on the reef between is a large rock or islet named Mikro. Shoal water extends  $1\frac{1}{4}$  cables south-westward from Praso islet. 10

**Smith shoal** lies 3 cables west-north-westward from the west end of Praso islet ; the shoal is a cable in length north and south, with 3 fathoms water on it, and is connected with the shoal water bordering Praso by a narrow ridge with  $4\frac{1}{2}$  fathoms on it ; elsewhere, close round the shoal, the depths are from 7 to 10 fathoms. 15

**Drepano** and **Phido**, the two southernmost islets, lie on a rocky shoal upwards of one mile in length east and west, the former islet near the west, and the latter near the east end of the shoal. The shoal extends  $1\frac{1}{2}$  cables eastward of Phido, and a spit, with 4 fathoms on its outer part, extends one-third of a mile westward of Drepano ; the northern edge of the ruined village, of Yeni shehr, bearing  $54^\circ$  true, and just open south-eastward of Mavro island, leads westward of the spit, but over the end of the  $4\frac{1}{2}$ -fathoms spit extending southward from Mavro. 20 25

At  $2\frac{1}{2}$  cables north-westward from Drepano, and close northward of the spit extending from that islet, is a shoal of  $2\frac{3}{4}$  fathoms, with 7 fathoms close north of it.

The passage between the 5-fathoms line around these islets and that of Mavro is from a quarter to nearly half a mile wide and 9 to  $6\frac{1}{2}$  fathoms deep. 30

**Anchorage**.—A vessel may anchor in any part of this passage, for shelter during northerly winds. In order to keep as near as possible a mid-channel course, the southernmost part of Yeni kioi village should be kept in line with a peaked hill in the interior, bearing  $81^\circ$  true. 35

**Current**.—The current sets through to the westward. See page 479.

**Aldridge rock**, with 5 fathoms water on it, lies east-south-eastward half a mile from the south-east point of Phido islet. 40

**Aird shoals** (*Lat.  $39^\circ 57' N.$ , Long.  $26^\circ 05' E.$* ).—A spit, with depths under 5 fathoms and a width of from one to 3 cables, extends northward from the shoal bank bordering the northern coast of Mavro

*General charts 1608, 1087, 224, 2836b.*

*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

- to a distance of one mile from that island; on the northern portion is a shallow part, 4 cables in length, composed of patches of hard sand, interspersed with rocks having from  $1\frac{1}{2}$  to 3 fathoms of water on them, and called Aird shoals. These shoals are separated from the shallow water fringing the shore of Mavro by a passage 3 cables wide, carrying  $3\frac{1}{2}$  to 4 fathoms water over rocky bottom.

The west end of Gadaro islet, in line with the east end of Phido islet, bearing  $176^\circ$  true, leads eastward of Aird shoals.

- 10 **The current** here sets strongly to the south-west.

**MANSELL SHOAL.**—This is an irregularly-shaped narrow shoal, 4 cables westward of the Aird shoals, and more than three-quarters of a mile in length, with general depths of 5 and 4 fathoms, but only 3 fathoms near the south-eastern and north-western ends.

- 15 The patch at the north-western extremity bears  $343^\circ$  true, distant  $1\frac{2}{10}$  miles from the west end of Mavro island. Between this shoal and Aird shoals there are from 6 to 10 fathoms, and between its south-eastern end and the bank extending from Mavro, which are  $3\frac{1}{2}$  cables apart, there are  $5\frac{1}{2}$  and 7 fathoms.

- 20 The eastern extreme of Tenedos island open westward of Praso islet,  $168^\circ$  true, leads westward of Mansell shoal.

**Loney bank** is about a quarter of a mile in length east and west, and has from 9 to 7 fathoms water on it. The least depth lies nearly  $2\frac{1}{2}$  miles,  $14^\circ$  true, from the east end of Mavro, which is there nearly

- 25 in line with the west end of Drepano islet.

- Coast.**—From Paleo Kastro the coast trends north-north-eastward for  $4\frac{3}{4}$  miles to Cape Yeni shehr, and then turns north-eastward about  $1\frac{1}{2}$  miles to Kum Kale, on the south side of entrance to the Dardanelles. The cliffy coast is bordered by sand and rocks, on which it is difficult to land. At  $1\frac{1}{2}$  miles northward of Paleo Kastro is the village of Yeni kioi, on a hill, 180 feet high, and  $1\frac{1}{2}$  miles farther north and close to the coast at Demetrios point, is a tumulus, 210 feet high. At  $1\frac{1}{2}$  miles further on, and close to Cape Yeni shehr, is the village of that name, now in ruins. The plain of Troy lies eastward of this part of the coast.

- CAPE YENI SHEHR** (ancient *Sigeum prom.*) (*Lat.*  $39^\circ 59' N.$ , *Long.*  $26^\circ 11' E.$ ) is known by a hill about 230 feet high with a large house on its summit, to the southward of which is the ruined village. The cape springs from high land steep towards the sea, but terminates in a low point. North-eastward, and a short distance inland, two tumuli are conspicuous. These are said to be the tombs of Achilles and Patroclus.

*General charts 2429, 1608, 1087, 224, 2836b.*

*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

**YENI SHEHR BANK.**—The shallow water which surrounds Paleo Kastro continues along the coast to the northward, in places extending off nearly a quarter of a mile, and at one mile southward of Cape Yeni shehr, the bank of this name with from  $2\frac{1}{2}$  to  $4\frac{1}{2}$  fathoms water on it, extends off three-quarters of a mile. Off Cape Yeni shehr itself the distance to the edge of the 5-fathoms line is 6 cables, whence this depth of water gradually approaches nearer the coast to Kum Kale, where the depth of 5 fathoms will be found  $1\frac{1}{2}$  cables off. The bank was reported to be extending in 1906. 5 10

Between Cape Yeni shehr and Kum Kale, the one-fathom contour line extends a long way from the shore, viz., a quarter of a mile from the cape, and half a mile from the shore 4 cables north-eastward of the cape; from thence the edge of this one fathom bank runs nearly straight to the extremity of Kum Kale. 15

**Anchorage.**—To the southward of Yeni shehr bank there is anchorage much used by tugs or by vessels waiting for a fair wind. The best berth is in 12 fathoms, with Cape Yeni shehr  $33^\circ$  true, and the tumulus on Demetrios point  $141^\circ$  true.

**Kum Kale** is an old stone castle originally designed for 200 guns, but has now 64 in a battery at the water line, and is in a ruinous condition, with a few indifferent houses near it. This castle, with Seddul Bahr on the European side, is supposed to command the entrance to the Dardanelles, which is 2 miles wide. 20

**LIGHT** (*Lat.  $40^\circ 00'$  N., Long.  $26^\circ 12'$  E.*).—A light is shown at an elevation of 29 feet above the sea, from a mast on white house, 29 feet high, on the north-western angle of Kum Kale. 25

**DIRECTIONS.**—Approaching the Dardanelles from the south-westward, the island of Tenedos will be first sighted, and by day at a distance of upwards of 30 miles; at night, the light on Ponente point, the west end of the island, will be seen. A vessel may steer so as to pass westward of the island through the Lemnos channel, or between it and the coast of Asia, known as the Tenedos channel. As the Dardanelles is approached the current will be forcibly felt, and at times it runs with such strength as to oblige sailing vessels to anchor in light winds. 30 35

The distance between Tenedos and the Kharos bank off the eastern side of Lemnos (*see* page 465), is about 17 miles, and in order to avoid the bank a sailing vessel, working to windward, should tack short of a line passing through Cape Irene (the south-eastern point of Lemnos), and Cape Kephalo (the eastern extreme of Imbros island), bearing about  $54^\circ$  and  $234^\circ$  true, from each other. The bank, when in its vicinity, will probably be recognised during day by the discoloured water; it may also be avoided by not passing westward of the meri- 40

*General charts 2429, 1608, 1087, 224, 2836b.*



*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

dian of the west end of Imbros. At night, Tenedos light should be kept well in sight from the deck; a sector of *red fixed* light is shown over Kharos bank from the lighthouse on Cape Plaka, the north-eastern point of Lemnos.

To the southward of Kharos bank (page 466), the current sets northward about a quarter of a mile an hour.

In standing towards Shimal bank, at the north-western end of Tenedos, tack before the northern edge of the ruined village of Yeni shehr comes open of the south-eastern end of Mavro island. Having weathered Shimal bank, a vessel may seek an anchorage under Mavro island, or off the mainland. In passing between Tenedos and the Rabbit islands, keep on the northern side of the channel, as the current sets to the west-south-west towards Shimal rock. Petro islet, bearing southward of 121° true, with Gadaro islet open three times its length to the eastward, will lead north-eastward of Shimal rock.

The eastern extreme of Tenedos island kept bearing eastward of 159° true will lead westward of Smith shoal; when northward of Smith shoal, the eastern extreme of Tenedos island open westward of Praso islet, 168° true, will lead westward of Mansell shoal. When passing northward of Mavro island (*Lat. 39° 56' N., Long. 26° 05' E.*), it will be prudent, in consequence of the strength and uncertainty of the currents, to give the island and its shoals a wide berth. The Tumulus, 210 feet high, over Demetrios point, north of the village of Yeni kioi, bearing 105° true, and in line with a peak inland, leads well northward of Mansell and Aird shoals; it should be observed that this mark also leads over Loney bank.

*Charts 1599, 1087.*

Short tacks should be made northward of the influence of the current, or near the southern side of Imbros island, where north-easterly winds generally draw more to the northward, and where the shore is free from danger outside the distance of one mile, until the vessel on the port tack can fetch Cape Helles.

If, in light winds, the strength of the current should render it actually necessary, anchorage may be obtained southward of Imbros. See page 484.

*Chart 1599, Cape Eski Stambul to Kum Kale.*

Tenedos channel is generally used by vessels coming from the southward, the only danger on entering being Suffren shoals bordering Cape Eski Stambul, which should be given a wide berth (*see page 466, and view B on chart 1608*). When northward of these shoals, steer for Gadaro islet, and if it is intended to pass between it and Ocean rock give the islet a berth of a quarter of a mile; and when the three mills at the south-east end of the town of Tenedos open north of

*General charts 2429, 1608, 1087, 224, 2836b.*

*Chart 1599, Cape Eski Stambul to Kum Kale. Var. 2° 30' W.*

Gadaro (the mark leading northward of Ocean rock and Yukyeri shoals) steer as convenient to the northward.

The passage most frequented is between Little Gadaro (*see* page 471), and Tenedos mole; it is  $7\frac{1}{2}$  cables in breadth, from 11 to 7 fathoms deep, free from danger, and easy of access. When working to the northward, the shoal bank extending from Paleo Kastro should be given a wide berth, and Phido islet should not be approached in a ship of heavy draught nearer than one mile, so as to pass eastward of Aldridge rock. To pass eastward of Aird shoals, northward of Mavro, keep Gadaro islet open eastward of Phido islet, bearing southward of 176° true. 5 10

Continuing northward, alter course gradually, so as to give Kum Kale point a berth of 2 cables, taking care in running along the edge of Yeni shehr bank not to go into less than 10 fathoms, as the water shoals rapidly. 15

*Chart 2429, The Dardanelles.*

When the large village of Aren kioi or Ghelmez (*Lat.* 40° 01' N., *Long.* 26° 21' E.), on the side of a hill, comes open northward of Kum Kale, 85° true, the course may be altered to the north-eastward. 20

**At night** the bearings of Ponente point, Gadaro islet, and Cape Helles lights will indicate a vessel's position.

Cape Helles light should not be brought northward of 16° true until Kum Kale light bears southward 92° true.

*Chart 1599, Cape Eski Stambul to Kum Kale.*

**Anchorage.**—A vessel may anchor anywhere eastward of Tenedos and the Rabbit islands during a calm, and no one should hesitate to anchor in mid-channel to prevent the vessel drifting with the current but with a fresh wind from the northward it is best to anchor in Bashika or Yukyeri bays. 25 30

**Current.**—Northward of Rabbit islands the current sets west-south-westward at the rate of  $2\frac{1}{2}$  knots, and between them and Tenedos, westward, at the rate of one knot per hour. Eastward of Rabbit islands and Tenedos the current sets southward with a velocity of  $1\frac{1}{2}$  to 2 knots per hour. *See* pages 470, 475, 476. 35

*Chart 2429, The Dardanelles.*

When approaching the Dardanelles from the south-westward, the north side of the entrance will be identified by the white cliffs of Cape Helles, on which is a conspicuous white stone lighthouse. On the south side of the entrance are the cliffs of Sigeum, and northward of them the hill of Yeni shehr, also steep and cliffy. Another conspicuous mark on the European side is Achi Baba, 730 feet above the sea, and nearly 5 miles north-eastward of Cape Helles; it makes 40

*General charts 1608, 1087, 224, 2836b.*

*Chart 2429, The Dardanelles. Var. 2° 30' W.*

as an isolated conical peak with a large tree on its summit. See view A on chart 1608.

- On a nearer approach, the villages of Yeni shehr (in ruins) and
- 5 Seddul Bahr will be perceived on their respective sides of the entrance; only a few houses of the former will be seen whilst the vessel is to the southward, but on bringing it to bear north-easterly the houses will open out. The castle of Kum Kale will also be seen on a low point which stretches from the hill of Yeni shehr northward.
- 10 Seddul Bahr is on the north side of the strait, and stands on the slope of the hill forming Cape Greco, 6 cables eastward of Cape Helles. Here is one of the old stone fortresses which gives its name to the town, and its great size, and the low but massive towers at the angles of the castle, render it a conspicuous object. It is now in
- 15 ruins. When these two towers can be distinguished the entrance of the Dardanelles will be plainly open.

- CAPE HELLES** (*Lat. 40° 03' N., Long. 26° 11' E.*).—This cape, on the northern side of the entrance to the Dardanelles, is the central of three high, steep, white cliffs, together forming a head-
- 20 land projecting to the south-west,  $1\frac{1}{2}$  miles in breadth, Cape Tekeh (*see* page 487) the north-western extreme, is the ancient *Mastusium* promontory, and has a building on it; on Cape Helles, are some ruins, a tomb said to be that of Protesilas, and a white stone lighthouse. On Cape Greco, the south-eastern extreme, is the castle of Seddul Bahr,
- 25 which with that of Kum Kale defends the entrance of the straits. Though this headland is steep, the shore is bordered by shallow water, and rocks and sand extend from the cape  $1\frac{1}{2}$  cables. See view A on chart 1608.

- LIGHT.**—A light is exhibited on Cape
- 30 Helles at an elevation of 98 feet above the sea, from a white stone tower, 33 feet in height.

- Anchorage.**—Vessels sometimes anchor between Cape Helles and Seddul Bahr, to await a fair wind, but it is a bad anchorage. The
- 35 best berth is in 7 fathoms, sandy bottom, at 4 cables from the shore, with the south angle of the castle bearing about 75° true, and the fort on the height 47° true.



Cape Helles lighthouse.

- Seddul Bahr castle** (Barrier of the sea), in ruins, is a quadrangular enclosure with solid walls, and low towers at the angles; it
- 40 stands on the side of the hill which slopes to Cape Greco, with its lower wall at the water's edge. It is the largest fortress in acreage in the Dardanelles. On the height behind the castle is a fort named Shahim Kalessi.

*General charts 1608, 1087, 224, 2336b.*

*Chart 2429, The Dardanelles. Var. 2° 30' W.*

The small town of Seddul Bahr stands on a hill eastward of the castle, and is one of the pratique posts for coasting vessels proceeding to Constantinople, and very convenient, as a vessel can keep out of the current, under the lee of the cape, while her boat communicates. 5

**LIGHT.**—A light is shown, at an elevation of 36 feet above the sea, from a white iron framework, 24 feet high, on the south point of the fortress of Seddul Bahr, Cape Greco.

The above lights on the north, with that of Kum Kale on the south, mark the entrance of the Dardanelles at night. 10

**Aqueduct.**—North-eastward of Seddul Bahr, about one-third of a mile from the shore of Morto bay, are five hydrants of an aqueduct, having the appearance of square pillars.

**Current.**—Between Kum Kale and Seddul Bahr the current runs W.S.W. at the average rate of  $1\frac{1}{2}$  knots, the maximum being about 3 knots. The current is stronger on the Asiatic side, and rushes along the edge of Yeni shehr bank with great velocity. 15

For description of the Dardanelles, *see* Black sea Pilot.

*Chart 1087, Thaso island to Dardanelles.*

**IMBROS ISLAND** (*Lat. 40° 10' N., Long. 25° 49' E.*).—This island is about 16 miles in length east and west, nearly 7 miles in breadth at the eastern and 5 miles near the western end. It is composed mainly of rocks of volcanic origin, but there are also important outcrops of sedimentary strata, the central portion of the island being a range of rocky domes and pinnacles of igneous origin, to the north and south of which lie fertile basins scored by hog-backed ridges. The northern coast is dominated by the highest ridge, rising above 1,500 feet, the loftiest peak, Mount Elias, near the centre of the island, being 1,959 feet high. The central ridge is, for the most part, over 1,000 feet in height. 20 25 30

There are few forest trees on Imbros island, but there is considerable variety in the natural vegetation, and in parts the numerous orchards, with olive and poplar groves, give the land a well-clothed appearance. The most striking feature is the contrast between the barren monotony of the southern slope, caused by the almost complete overgrowth of a khaki-coloured thorn bush, and the comparatively rich verdure of the interior basins. The presence of the olive shows that Imbros cannot be subject to long or severe frosts. 35

The island abounds in game, chiefly hares and partridges. It produces wine, oil, cotton, and lead, besides the currant vine, corn, and beans. The methods of cultivation are most primitive, but many of the peasants emigrate to the United States of America for a few years, returning with their earnings comparatively rich. 40

*General charts 1608, 1087, 224, 2836b.*

*Chart 1087, Thaso island to Dardanelles. Var. 2° 30' W.*

The water used for agriculture, and absorbed by the vegetation, is chiefly surface water, and dries up in the summer. The only permanent supply of drinking water is from wells sunk in the alluvial deposits of the valleys, deltas, and raised beaches, with an occasional hill-side spring.

The villages at Imbros are mostly collections of cottages built of rough stone and mud, and roofed with red tiles, with little chapels on every hill-top. In the villages facing the sea are numerous wind-mills, and nearly every house in the village has a threshing floor built of flat stones, enclosed by a ring fence of large stones. The villages are mostly placed above the line of cultivation and away from the stream courses. Imbros may be summed up as one of nature's beauty spots. The population of the island is about 9,000, mostly Greeks.

**Climate.**—The climate of Imbros is subject to that of the eastern Mediterranean, that is, a hot dry summer and a mild winter, characterised by the passage of frequent rain-bearing cyclonic storms.

**Winds.**—In the summer a steady breeze, sometimes a strong wind, passes from the Black sea over Imbros. The air, ever getting warmer, is dry, the only exception to this being that an occasional depression, forming in South Russia or Rumania, may draw air from the south-west over Imbros. The only summer rains, however, seem to be those due to thunderstorms.

In the winter the conditions are quite otherwise, owing to the situation of the island in the track of the cyclonic disturbances which pass from west to east. These cyclones, when passing over Imbros, are much elongated in a north-east and south-west direction, the consequent weather sequence resulting from the passage of one of these depressions being as follows:—A south to south-west wind springs up while the centre is still west of Imbros. This wind, which may bring rain, and sometimes brings a deluge, lasts until the low centre is over Imbros, when a short calm ensues, sometimes lasting for a day, but usually much less; then quite suddenly the temperature falls, and a north to north-east wind springs up, rising quickly to a gale, bringing the icy air from the Russian steppes and Balkans. The physiological effect of this wind, so dreaded by Ancients and Moderns alike, is the greater owing to the moisture which it frequently carries.\*

*Plan of Kephala bay on 1880.*

**Cape Kephala** (*Lat. 40° 09' N., Long. 26° 01' E.*).—The south-eastern portion of Imbros, though much lower than the lofty land behind it, is still about 100 feet high, and stretches out flat at that height from the isthmus at the head of the large bay west of Cape

\* Notes on the Geography of Imbros, by Alan G. Ogilvie. *Geographical Journal*, Vol. 48, No. 2, August, 1916.

*Plan of Kephalo bay on 1880. Var. 2° 30' W.*

**Kephalo.** The cape projects northward, is 90 feet high, and surrounded by a bank of sand and rock, which, within the depth of 5 fathoms, extends  $2\frac{1}{2}$  cables northward, 4 cables westward, and 6 cables eastward from the lighthouse; there are also detached patches of  $4\frac{1}{2}$  fathoms  $3\frac{1}{2}$  cables northward and 5 cables north-eastward of the same point. *See Directions below.*

**LIGHTS.**—Two lights placed vertically are shown from a mast over a large white dwelling with red roof, on the extreme of Cape Kephalo. The upper light is elevated 128 feet above the sea.

**Kephalo bay.—Beacons.**—This bay, situated westward of Cape Kephalo, affords good anchorage for all classes of vessels, except during bad weather from the northward, in from 5 to 10 fathoms, sand bottom. The head of the bay is about 2 miles from the entrance, and it is about the same breadth at its widest part; at 6 cables from its head the width contracts to one mile between Cliff point, 95 feet high, on the east, and Rocky point on the west. From Cape Kephalo the high, yellow, cliffy coast trends to the southward for about half a mile and then to the westward to Cliff point, on which is a pole beacon, with triangular topmark; it then trends to the southward again, and the cliffs terminate about half a mile farther on. The head of the bay, which follows a westerly and north-westerly direction, is sandy and backed by numerous low sandhills. The coast then trends north-eastward to Rocky point, a somewhat conspicuous mass of black boulders; thence it curves to the north-westward and is irregular, with stretches of sand and rock alternately, and backed by bare rocky slopes. On the east and west sides of the bay are patches of cultivation.

A beacon, consisting of a pile of stones surmounted by a wooden pillar, the whole painted white, is erected  $3\frac{1}{2}$  cables north-westward of Rocky point, at a height of 104 feet (*Lat. 40° 09' N., Long. 25° 58' E.*).

**Directions.**—In approaching Kephalo bay from the eastward, the cape of that name, on which is a light-structure and dwelling, should be given a berth of at least one mile, as dangerous unsurveyed reefs are known to extend for a considerable distance off the northern and eastern sides of it. After rounding the cape, steer in a westerly direction until Windmill hill bears 227° true, and steer for it, anchoring as convenient.

A good berth for a large vessel, in  $7\frac{1}{2}$  fathoms over sand, is with Windmill hill bearing as above and Cliff point bearing 105° true. Generally speaking, the holding ground is good and composed of fine sand, but it is not so good in the south-eastern part of the bay as in other parts.

It is a perfectly safe anchorage during a southerly gale, but the usual precaution is necessary, as the wind generally shifts suddenly

*General charts 1608, 1087, 224, 2836b.*

*Plan of Kephalo bay on 1880. Var. 2° 30' W.*

and with violence to the north-west, and vessels should be prepared to proceed to Alikí anchorage directly a shift of wind to the northward occurs. The barometer will nearly always give warning of an impending change, usually commencing to rise before the northerly wind sets in.

Foul cove, in which are numerous dangers, is in the bight between Cape Kephalo and Cliff point, and should be avoided as an anchorage.

Oruba cove, on the south side of Rocky point, affords good shelter in northerly gales for boats and small craft up to 100 tons; there is also good landing.

**Supplies** are scarce, only a few vegetables and eggs being procurable.

*Chart 1087, Thaso island to Dardanelles.*

**Caution.**—With the exception of Lemnos and the entrance to the Dardanelles, the surveys on which chart 1,087 is founded are imperfect.

**Bank.**—This end of the island is bordered by a bank with from 9 to 6 fathoms water on it, extending  $1\frac{3}{4}$  miles from the shore at that distance south-west of the cape. The eastern edge of the bank is one mile and the northern about half a mile from Cape Kephalo. This portion of the coast has a shallower fringe, extending about a third of a mile.

**Cape Alikí** (*Lat. 40° 07' N., Long. 25° 58' E.*).—At 3 miles south-westward of Cape Kephalo is Cape Alikí, which consists of two clifly masses linked together and to the shore by sand bars, with shoal water extending from it more than a quarter of a mile, and at  $1\frac{1}{4}$  miles farther westward rocks, covered and uncovered, project half a mile southward.

**South coast.—Anchorage.**—Within Cape Alikí is a brackish lake about  $1\frac{1}{4}$  miles in length, which is gradually filling up with sand, and nearly dries in summer. Vessels often take shelter from northerly winds by anchoring near the cape, abreast the lake. H.M.S. *Devastation*, in October, 1877, anchored southward of the lake, in 9 fathoms water, with the extreme point of land to the eastward bearing 72° true, and a house with a red roof near the shore 340° true. The red-roofed house is conspicuous from a distance, stands on a slightly elevated piece of land, and is the only building near. H.M.S. *Surprise* anchored near here in 1904 in 6 fathoms, with Cape Alikí bearing 63° true, and the red-roofed house 323° true; from this position the water shoaled gradually to the shore. The mill, which stands on a slight elevation at the back of the lake, kept on an 8° true bearing, is a good leading mark into the centre of the bay. Large ships should not go into a less depth than 9 fathoms.

*General charts 1608, 1087, 224, 2836b.*







*Mt. Elias.*

Imbros.—From a position 6 miles  $108^{\circ}$  true from Cape Kephalo.



*Mt. Elias.*

Imbros.—N. W. coast.

*Arlika point,  
bearing  $186^{\circ}$  true,  
 $5\frac{1}{2}$  miles.*



*Mt. Elias, bearing  
 $214^{\circ}$  true, 16 miles.*

Imbros.—North coast.

*Chart 1087, Thaso island to Dardanelles. Var. 2° 40' W.*

H.M. ships have also anchored in 10 fathoms of water, with Cape Alik bearing 32° true, distant about 8 cables, and the salient point eastward of it in line with Coja chemen dagh (Gallipoli) 62° true. From this position the house with red roof was shut out by the higher land near Cape Alik. 5

Water in small quantities may be obtained by digging in the sand close to the beach, a little westward; about 6 miles westward of Cape Alik it may be obtained in any quantity.

The western part of the south coast of Imbros island should be approached with caution, as there are one or two detached shoals and shallow water bordering the shore. 10

Anchorage will be found about 2½ miles westward of Cape Niger, in 16 fathoms water, good stiff holding ground, with Capes Niger and Alik in line bearing about 75° true, the east point of the bay 58° true, and Avlaka point shut well in behind the west point of the bay and most southerly point of the island, the latter bearing 282° true. 15

For Pyrgos anchorage, see Appendix V., page 511.

There is also anchorage eastward of Avlaka point, taking care to avoid the bank stretching off two-thirds of a mile from the shore, 2 miles from the cape. The edge of the bank at the depth of 3 fathoms bears 120° true, and is distant 2 miles from the cape. 20

**Avlaka point** (*Lat. 40° 07' N., Long. 25° 40' E.*), the western extreme of the island, is 11½ miles east-north-eastward from Cape Plaka of Lemnos, and the passage between is clear and deep. 25

**Currents.**—The currents round the western end of Imbros are variable; a strong current has been found setting eastward along the south coast.

**North coast.**—The north coast of Imbros appears to be clear of danger beyond a quarter of a mile from the shore, but to afford no anchorage, being very steep to almost everywhere. 30

*See views opposite.*

**Kusu bay**, at the north-east end of Imbros, is about one mile wide in the entrance between Welcome point, the north-eastern extreme of the island, and Grafton point to the south-east, and recedes south-westward two-thirds of a mile. The water is deep off Welcome point, but about 2 cables from Grafton point the depth is 3 fathoms; farther in the chart shows 10 and 11 fathoms at a quarter of a mile from the shore on the south side and head of the bay, with 3 fathoms close in. The bay is open to the north-east and east. From Grafton point the coast trends southward 3 miles to the entrance of Kephalo bay. 40

For additional information on Kusu bay, see Appendix V., page 511.

**SAMOTHRAKI.**—This island (ancient *Dardania*), situated 13 miles north-westward of Imbros, is 12 miles in length east-south-east and west-north-west, nearly 7 miles in extreme breadth, and somewhat oval in shape. Mount Fengari, near the centre, is 5,248 feet 45

*General charts 1608, 1659, 224, 2836b.*

*Chart 1087, Thaso island to Dardanelles. Var. 2° 40' E.*

above the sea, a greater elevation than on any of the islands in the archipelago, excepting Mount Delphi of Eubœa and the Madara of Crete. The coast of Samothraki is regular, skirted here and there close to by rocks. It has no port or roadstead, but occasionally anchorage may be found on its south-western side. The island produces corn, oil, honey, and wax; it also feeds a large number of goats. The population is about 4,600, nearly all Greeks.

**Communication.**—The only communication is by caique with Dédé-Agatch, Thaso, and Imbros islands.

**Cape Akrotiri** (*Lat. 40° 28' N., Long. 25° 27' E.*), the low north-western point of Samothraki, which is almost level with the sea, extends  $1\frac{1}{2}$  miles from the general line of the coast.

**At night** too much caution cannot be observed when in its vicinity, as the proximity of the high land renders any judgment of distance doubtful.



*Mt. Fengari.  
bearing 175° true.*

Samothraki.

**ZURAF A ROCK.**—At about  $6\frac{1}{4}$  miles eastward of Skepasto point, the north-eastern extreme of Samothraki, is a dangerous ledge named Zurafa rock, about 100 feet in length, of which the most part is nearly awash, but in two places, some 50 feet apart, it is dry. At the west end the highest point of the rock, a small sharp head, is 2 feet above water. The other part exposed is a flat surface in the centre of the rock, about a foot only above the level of the sea.

When this rock was examined by Captain Wharton in H.M. surveying vessel *Fawn*, in 1880, there was too much sea to land, or to sound close to it, but apparently the rock is fairly steep to on all sides. It rises from a small bank of soundings; at one cable northward of the rock there are 16 fathoms. To the westward the bank extends farther, as 11 and 14 fathoms were carried in that direction for about 4 cables from the rock, when the water deepened. With a moderate south-westerly wind and short sea the break on Zurafa rock was visible from the deck when 4 miles distant.

**Current.**—The current here has been observed to set eastward 2 miles an hour.

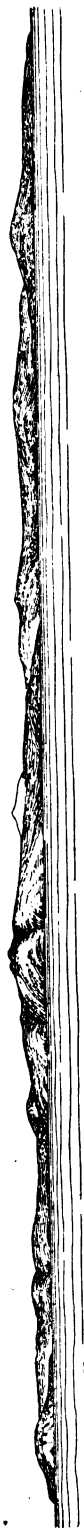
*Chart 2429, The Dardanelles.*

**GALLIPOLI PENINSULA.**—**Cape Suvla** (*Lat. 40° 19' N., Long. 26° 13' E.*), on the mainland, is the north-western extreme of the Gallipoli peninsula and the western termination of Kislar dagh, a

*General charts 1087, 224, 2836b.*



To face page 487.]



Gallipoli peninsula.

*C. Suda, bearing  
78° true, 7 miles.*

*Chart 2429, The Dardanelles. Var. 2° 30' W.*

ridge about 300 feet high, on the south side of the entrance to the Gulf of Xeros. The cape bears 8° true, distant 15½ miles from Cape Tekeh (page 480), at the entrance to the Dardanelles; the coast between, forming an indentation 3½ miles deep, consists at first of cliffs and then of sand, backed by hills in the interior varying from 230 to 950 feet high. 5

*See view opposite.*

*Chart 1087, Thaso island to Dardanelles.*

**Shoal.**—Off the mouth of the brook Chana ovasi, situated nearly midway between Cape Tekeh and Suvla bay, a shallow bank extends two-thirds of a mile from the shore. 10

*Chart 2429, The Dardanelles.*

**The coast.**—The shore southward of Niebruniessi point, is a shelving beach of hard sand admirably adapted for landing, and has a cultivated plain behind it. The water-courses are dry in summer, but there are wells and springs of good water, at distant intervals. The country round seems fertile, and numerous herds of cattle, goats, &c., feed on the plain. At about one mile inland, a tolerable road leads to the village of Kuchuk Hanafart, and thence a good road leads to Gallipoli. 15 20

**Current.**—On the western coast of the Gallipoli peninsula the usual set of the current is to the north-north-westward, at about 1½ miles per hour. It is, however, much influenced by the prevailing wind. 25

*Plan of Suvla bay on 1880.*

**Suvla bay or Little Hanafart.**—On the southern side of Cape Suvla is a semicircular bay of the same name, called also Little Hanafart, 1½ miles wide between Cape Suvla and Niebruniessi point, and more than a mile deep, with from 12 to 5 fathoms, water, sandy bottom; it forms a good summer anchorage, affording shelter from northerly, easterly, and southerly winds. The north shore between Cape Suvla and Cape Godfrey, nearly a mile eastward, has low cliffs in places, and is fringed with rocks and rocky ledges. It is broken by points separated by small beaches, four of which have received names, viz., West, Kangaroo, Albion, and Hospital beaches. There are two piers at Albion beach, and one at Kangaroo beach. The south shore is bordered by low cliffs, the western part being fringed with rocks close in. It forms a bight called Berridge bay, between Niebruniessi point (*Lat. 40° 17' N., Long. 26° 14' E.*) and Cape Campbell, 8 cables north-eastward; at the head of Berridge bay, in the centre, is a pier. The head of Suvla bay is low and sandy, and appears to be clean. 30 35 40

*General charts 1087, 224, 2836b.*

*Plan of Suvla bay on 1880. Var. 2° 30' W.*

- A spit, with depths under 5 fathoms, having Talbot shoal of  $3\frac{1}{2}$  fathoms at its extremity, extends 2 cables west-south-westward from Cape Suvla. Shoal water under 5 fathoms extends from one to 2 cables from the north shore, from  $3\frac{1}{2}$  to  $5\frac{1}{2}$  cables from the head, from  $1\frac{3}{4}$  to  $2\frac{3}{4}$  cables from the south shore, and  $3\frac{1}{4}$  cables westward from Niebruniessi point; at  $3\frac{1}{4}$  cables west-south-westward from that point is a detached patch of 3 fathoms, with 5 and 6 fathoms around.

- Within the south part of the bay is a large shallow salt-water lake; it is nearly dry in summer and overgrown with rushes.

**Beacons.**—A beacon 10 feet high, with black and white horizontal stripes, stands on the south side of Suvla bay, at  $2\frac{1}{4}$  cables from Niebruniessi point, and another, 20 feet high, with white bands round the base, is on Cape Campbell.

- Landing** can be effected at the piers mentioned above, or on the beaches if necessary.

At  $1\frac{3}{4}$  cables north-eastward of Cape Suvla are the Taylor islets, the largest being half a cable in length, lying close northward of a point called Cape Nichol.

- Chart 224, Sea of Marmara.*

**The GULF of XEROS** is 17 miles wide at the entrance between Cape Suvla on the south and Cape Grenea on the north; thence the gulf extends  $31\frac{1}{2}$  miles east-north-eastward, between mountainous land on either side to the low shore at its head, and has no off-lying hidden danger.

- Chart 2429, The Dardanelles.*

**Caution.**—The northern coast of the Gallipoli peninsula lies about a half to three-quarters of a mile further to the northward than charted (1916).

- Kishlar rocks** (*Lat. 40° 20' N., Long. 26° 16' E.*).—At  $2\frac{1}{2}$  miles north-eastward of Cape Suvla, and half a mile from the shore, is the centre of a bed of rocks. These rocks extend nearly half a mile east and west, are above and below water, and steep-to, the 100-fathoms line of soundings passing about 2 cables outside them.

- Plan of Arapos Mermedia bay on 1880.*

- Arapos Mermedia bay.**—This little bay (Ejelmar),  $5\frac{1}{2}$  miles north-eastward of Cape Suvla, is two-thirds of a mile wide between East and West capes (180 feet and 280 feet high respectively),  $3\frac{1}{2}$  cables deep, with from 9 to 5 fathoms water; the holding ground is good, being thick black mud, but the bottom near the shore, especially under the cliffs, is foul. The head of the bay consists of about half a mile of clear beach, generally admitting a ship's launch to go close in. A

*General charts 2429, 1087, 224, 2836b.*

*Plan of Arapos Mermedia bay on 1880. Var. 2° 20' W.*

tolerably good road leads into the interior, and between the hills within is a large plain.

**Shoals.**—Shallow rocks lie a quarter of a cable from the north part of each cape. A rock, with 3 feet water on it, lies two-thirds of a cable from the point just westward of the Kurtumus Dere. A ledge of rocks, over which there are from 2 to 3 fathoms water, extends in a westerly direction  $1\frac{1}{2}$  cables from the eastern shore, 3 cables from East cape. In addition to these dangers, the irregular 3-fathoms line follows the shore of the bay round at an average distance of a cable.

**Anchorage.**—The best anchorage is in about 8 fathoms of water with West cape bearing  $291^\circ$  true, distant 3 cables, and about  $1\frac{3}{4}$  cables from the shore.

**Good water** may be obtained from the Kurtumus Dere that runs into the bay through a cultivated valley, and wood is plentiful.

*Charts 224, 1004.*

**COAST.**—From Arapos Mermedia bay east-north-eastward to Pasha Dere, a small jagged rock, 16 feet high, close to the shore, the distance is  $11\frac{1}{2}$  miles, the water being all along deep. Pasha Dere is foul, and 2 cables outside it there are only 5 fathoms of water. At less than one mile within the coast is a range of mountains varying from 1,000 to 1,478 feet high. A projecting point,  $4\frac{1}{4}$  miles east-north-east of Pasha Dere, has rocks off it at the distance of about one cable; at nearly three-quarters of a mile westward of the point, and 2 cables from the shore, is a shoal with  $2\frac{1}{2}$  fathoms on it. Yeni kioi, a town on a hill 748 feet high, with some windmills near it, is over a mile from the sea, and  $2\frac{1}{4}$  miles south-westward of the point alluded to.

*Chart 1004, Western part of Sea of Marmara, &c.*

**Yenikli liman** (Lat.  $40^\circ 31' N.$ , Long.  $26^\circ 42' E.$ ), a bay  $3\frac{3}{4}$  miles farther eastward, will be known by its red cliffs; here is the narrowest part of the Gallipoli peninsula, where in 1853 the English and French threw up a line of earthworks nearly across to Gallipoli strait.

Between Yenikli liman and Cape Xeros, 3 miles north-eastward, the coast consists of irregular cliffs from 50 to 200 feet high, but which are broken nearly midway by low marshy land; the cliffs are skirted close to by rocks.

*Plan of Port Baklar on 1892.*

**Cape Xeros** is the termination of Baklar burnu, a projecting tongue of land forming the western side of a bay named Port Baklar, and on it are the remains of an old mud fort, about 50 feet above

*General charts 2429, 1087, 224, 2836b.*



*Plan of Port Baklar on 1892. Var. 2° 20' W.*

the sea; the cape is surrounded by rocks, which project nearly half a cable.

- Port Baklar** is nearly filled with an extensive shoal bank, the whole shore being skirted here and there by rocks, and half a mile south-eastward of Cape Xeros shallow water extends off nearly that distance. A break or opening in the shoal ground, about  $3\frac{1}{2}$  cables from the cape, affords anchorage space for small vessels in from 4 to  $3\frac{1}{2}$  fathoms water, good holding ground. A small hill, like a tumulus, 4 cables within the head of the port, bearing  $216^\circ$  true, leads into the deepest water. An isolated patch, with 3 fathoms on it, lies close westward of this leading mark, and  $154^\circ$  true, 4 cables from Cape Xeros. Vessels of heavy draught having occasion to call at this port should anchor farther out.

- 15 *Chart 1004, Western part of Sea of Marmara, &c.*

- Kavach river** (*Lat.  $40^\circ 36'$  N., Long.  $26^\circ 50'$  E.*).—From Port Baklar the coast trends north-easterly about 4 miles, and then northward  $1\frac{1}{2}$  miles to the mouth of Kavach river, at the head of the gulf. A shoal bank extends one-third of a mile from the mouth of the river, which bears  $53^\circ$  true, about 5 miles from Cape Xeros; the passage in, having a depth of about 6 feet, is between two sandbanks, and the river is navigable for boats as far as the village of Kavach, distant about  $2\frac{1}{2}$  miles. Shoal water is reported to exist from one to  $1\frac{1}{2}$  miles south-south-westward from the entrance. From Kavach river the coast trends northward  $3\frac{1}{4}$  miles, and westward about the same distance to Bustan burnu, a point northward of Xeros island.

*Plan of Xeros islands on 1892.*

- Shoal.**—Between Bustan burnu and a point 7 cables westward of it (also 2 cables eastward of a low point with a windmill on it) the shore is fronted by shallow water and broken uneven ground, which should be avoided, and at 6 cables off it, between the two points, is a rocky shoal, awash, about one cable in length north and south. The shoal lies with the hummock of Mount Dohan Aslan appearing just open of the west end of Xero mikro, bearing  $134^\circ$  true, and distant from the latter  $1\frac{1}{2}$  miles. (*See view on chart 1892.*) To avoid the shoal keep nearer the islands than the main shore.

**Water** may be obtained from a small stream nearly 2 miles westward of the windmill just alluded to.

- XEROS ISLANDS.**—**Xeros**, the largest of these three islands, lies  $3\frac{1}{2}$  miles northward of Cape Xeros, and is about a third of a mile in average diameter, with a round tower and the ruins of a middle age fortress or monastery on it; the island is clifty, with rocks and shoal water extending about half a cable from its salient points.

*General charts 1004, 224, 2836b.*

*Plan of Xeros islands on 1892. Var. 2° 20' W.*

**Xero mikro.**—At 6 cables east-north-eastward from Xeros island is Xero mikro, nearly a quarter of a mile in length. To the eastward of Xero mikro, separated by a passage  $1\frac{1}{2}$  cables wide, and 6 to 10 fathoms deep, is Xero Skopelo; both these little islets are surrounded by rocks and shoal water to a distance of about half a cable. 5

**Anchorage** (*Lat. 40° 38' N., Long. 26° 45' E.*).—Between Xeros and Xero mikro there is anchorage in 15 or 16 fathoms water, sand and mud; and to the north-north-westward and north-eastward of Xero mikro there is anchorage for any number of ships in from 10 to 14 fathoms, good holding ground. 10

Xero mikro is  $1\frac{1}{10}$  miles from the north shore of the gulf, and with Xero Skopelo lies on the tail of a bank with from 6 to 9 fathoms water, uniting the two; the bank has from 10 to 14 fathoms on either side of it, and vessels should anchor north-eastward of it. 15

*Charts 1004, 1087.*

**Coast.**—The shore westward of the Xeros islands to Cape Ibriji, about 10 miles from Bustan burnu, and the only salient point on the northern side of the gulf, is bordered here and there by shallow water at the distance of from one to  $2\frac{1}{2}$  cables; at Cape Ibriji shoal water extends off about  $1\frac{1}{2}$  cables, and thence a narrow shoal bank continues along the shore westward to Cape Grenea, but there are no off-lying dangers. It is backed by hills and mountainous land in the interior. Approaching from Cape Grenea, Cape Ibriji makes like an island, and might possibly be mistaken for Xeros island. Between Bustan burnu and Cape Ibriji is the village of Kadi kioi, a mile inland. 20 25

Ibriji bay, a small narrow bay with 150 yards of sandy beach at its head, and with deep water close inshore, situated two-thirds of a mile north-eastward of Cape Ibriji, is a good landing place. It is intended to be used eventually as the port for the coal mines of Keshan, 15 to 16 miles inland. 30

**The currents** in the gulf of Xeros are irregular and appear to be influenced by the wind; after a fresh northerly wind for a few hours a strong southerly set has been experienced, but directly the wind moderated the current ran strongly in the opposite direction. In the bight of the coast off Enos, northward of Cape Grenea, the currents are strong (2 or 3 knots an hour) and irregular.\* 35

*Chart 1087, Thaso island to Dardanelles.*

**CAPE GREMEA** (*Lat. 40° 35' N., Long. 26° 07' E.*), the northern point of entrance to the Gulf of Xeros, situated  $18\frac{1}{2}$  miles westward of Cape Ibriji, is a rounded headland composed of low yellow 40

\* Nav. Lieut. James Henderson, H.M.S. Ruby, 1878.

*Chart 1087, Thaso island to Dardanelles. Var. 2° 30' W.*

cliffs. The actual cape, a yellow cliff, is separated from yellow cliffs on either side by low sandy beaches, that to the eastward being about one mile in length. It is difficult at first to distinguish the cape from  
 5 the other cliffs, but it may be recognised by the sandy beaches on each side, and by the fact that the cliff to the eastward is longer, has a cleaner face, and, coming from the south, shows two clefts close together appearing like the letter W. The Pontetaimon monastery, near Amygdhalia, 7 miles north-north-eastward in the direction of  
 10 Mount Chat, 1,305 feet high, is conspicuous from off the cape.

*See view at page 493.*

**Shoal bank.**—The whole coast of Cape GreMEA is bordered by a shallow bank, but a little northward of the cliffs, and  $5\frac{1}{2}$  miles southward from the entrance to Lake Bori, the bank, with one to 2 fathoms  
 15 on it, extends off  $1\frac{1}{2}$  miles, narrowing gradually in width until one mile south of the entrance, whence it widens again. Vessels south of the cape should not stand into less than 7 fathoms water; west and north-west of the cape, for at least 3 miles beyond the cliffs, a vessel should not stand into less than 12 fathoms, as the water shoals suddenly from  
 20 10 to 3 fathoms.

**Caution.**—As several vessels have grounded on the shoal bank north-westward of the cape, and the current from the westward sets strongly over it, care should be taken when in its vicinity; the shore in this locality should be given a berth of at least  $2\frac{1}{2}$  miles. A good  
 25 mark by day for clearing the danger is to keep the town of Enos open of the bluff on the south side of the lake.

**Lake Bori** is 6 miles northward of the cliffs of Cape GreMEA; the coast between is low and bordered by shoal water. The lake is irregular in shape, about 2 miles in extent, with from one to 6 feet of  
 30 water. One of the mouths of the Maritza river (ancient *Hebrus*) opens into it, and another mouth disembogues a little north of the entrance.

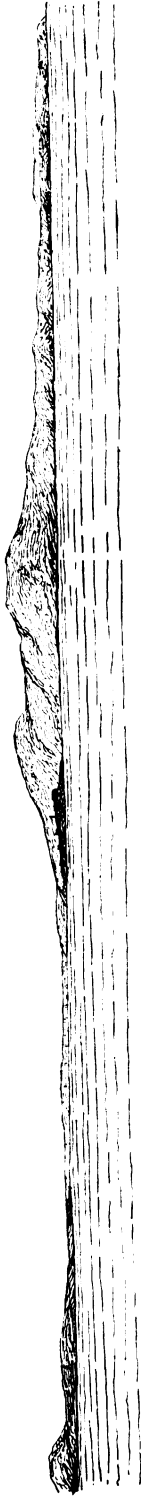
The entrance to Lake Bori (*Lat. 40° 43' N., Long. 26° 03' E.*) is shallow, and shifts with a gale of wind.

35 Local sailing boats of about 30 tons can get over the river bar when unlading, the usual depth being  $3\frac{1}{2}$  feet; they leave Enos partly loaded and complete outside.

Coasting vessels of any size anchor with the town of Enos bearing about  $41^\circ$  true, and have apparently a little shelter from southerly  
 40 gales by the shoals of Cape GreMEA. There is temporary anchorage off the town in 7 fathoms. It is, however, recommended that when the summit of Samothraki is covered with clouds (an infallible warning) a vessel should gain an offing.

*General charts 224, 2836b.*





*C. Grenea,  
bearing 120° true  
9 miles.*

*Mouth of the Maritza.*

*Tchatal Tepe.*

*View off Enos.*



*Cape Makri,  
bearing 58° true, 12 miles.*

*Bluff of Marona.*

*Coast of Bulgaria.*

*Chart 1087, Thaso island to Dardanelles. Var. 2° 30' W.*

**Enos.**—On the south side of Lake Bori is the town of Enos and an old Genoese castle, with a population of about 2,000, chiefly Greeks. Enos is the port of Adrianople, with which it has some trade in corn, wool, camel's hair, cotton, leather, saffron, silk, wax, and copper; it is distant from Adrianople about 70 miles, and has water communication by the Maritza, which is navigable for flat boats all the year round, and for barges from October to June.

View opposite.

**Telegraph.**—Enos is connected by telegraph with Keshan, and thence with Adrianople and Gallipoli.

*Plan of Dédé Agatch road on chart 2836b.*

**DÉDÉ AGATCH.**—This town, in Bulgaria, is 9 miles north-westward of the mouth of Lake Bori, and close eastward of some red cliffs; it stands on low ground covered with trees.

**LIGHT.**—To the westward of the town, and about 220 yards from the entrance to the small or caique harbour, a light is shown, at an elevation of 115 feet above the sea, from a white column on a cliff 20 feet high.

*Chart 1087, Thaso island to Dardanelles.*

**Directions.**—Vessels bound for Dédé Agatch (*Lat. 40° 50' N., Long. 25° 55' E.*), and passing to the eastward of Imbros and Samothraki, have two dangers to avoid, the Zurafa, an isolated rock  $6\frac{1}{4}$  miles to the eastward of the latter island (*see page 486*), and the shoal bank bordering the coast north-westward of Cape Grenea, the northern point of the entrance to the Gulf of Xeros. Several vessels have grounded on the latter danger by keeping so far over to clear Zurafa rock as to pass too close along the shore southward of the town of Enos. Cape Grenea may be recognised by the hill near Enos, 620 feet high, and which makes as a double peak. From abreast the cape a conical hill in the range behind Dédé Agatch should be steered for, which mark leads direct to the lighthouse. This hill cannot be mistaken, as the hills eastward and westward of it are higher.

After passing the latitude of Zurafa rock a berth of at least  $2\frac{1}{2}$  miles should be given to Cape Grenea (which makes as low yellowish cliffs) and also to all the coast beyond, up to Dédé Agatch. Enos will be seen on the side of a low hill facing the sea (though it is within and on the south side of the Bori lake), and remarkable by its old citadel and walls. When abreast of Enos the red cliffs westward of Dédé Agatch will be sighted, and make a good mark to steer for until the houses are seen.

The coast in the vicinity of Dédé Agatch is low, with a sandy beach, and a mountain ridge at a distance of about 2 miles. This ridge runs

*General charts 1087, 2836b.*

*Chart 1087, Thaso island to Dardanelles. Var. 2° 30' W.*

at an angle to the coast, joining it at Makri,  $7\frac{1}{4}$  miles westward. At a little distance the ridge appears to slope to the sea at Dédé Agatch, the flat land between not being visible.

- 5 Vessels passing westward of Samothraki should avoid its low north-western point, as, although the island is nearly the highest in the archipelago, that end of it stretches out almost level with the sea for  $1\frac{1}{2}$  miles. At night too much caution cannot be observed, as the proximity of the high land renders any judgment of distance  
10 doubtful.

*Plan of Dédé Agatch road on chart 2836b.*

- Anchorage.**—The best anchorage off Dédé Agatch is in  $4\frac{1}{2}$  fathoms, mud, from half a mile to one mile from the shore. The water shoals gradually from 10 fathoms at 3 miles distance to  
15 3 fathoms at a quarter of a mile from the shore, as charted, excepting off the point immediately to the west of the town, which has shoal water extending off it for more than half a mile, otherwise a ship may anchor anywhere. A vessel intending to anchor close inshore should not bring the small or caique harbour to the eastward of  $8^\circ$  true when  
20 standing in.

It is reported that the 5-fathoms line lies about 3 cables from the shore, and that steam vessels drawing 24 feet usually anchor that distance out.

- There is no protection from south-west winds, which occasionally  
25 blow with great violence and cause a heavy sea. The fact of a current generally setting along the coast will cause a ship to swing broadside to the sea and to roll heavily; vessels have usually to put to sea in consequence.

- The anchorage off Dédé Agatch (*Lat.  $40^\circ 50'$  N., Long.  $25^\circ 55'$  E.*)  
30 is not safe in a gale from S.E. round by south to W.S.W.; although the holding ground is not bad, an exceedingly disagreeable sea gets up with very little wind, and during a gale the whole place is one sheet of foam.

- Harbour.**—There is a small shallow artificial caique harbour or  
35 camber, 140 by 50 yards in extent, only affording shelter for lighters and small vessels; there is a depth of about 6 feet in the entrance, and of 5 feet at the Custom house landing stage, within. It is very difficult for the lighters to load, especially during a northerly wind, when the water is always lower than at other times.

- 40 Eastward of the small harbour is a sloping sea wall, from which some iron framework piers extend; lighters drawing about 6 feet can load alongside them. The railway runs along the sea wall. Half a mile westward of the town is a good pier, 150 feet in length, with a

*General charts 1087, 2836b.*

*Plan of Dédé Agatch road on chart 2836b. Var. 2° 30' W.*

depth of 6 feet alongside; on it is a railway line connected with the Saloniki railway.

There are no wharves.

**Landing** is considered impossible when a south wind blows; in 5 winter it may sometimes last a week.

**Population.—Climate.**—The town has a population of about 5,000 inhabitants, and, though clear of the low marshy ground surrounding the mouth of the Maritza, during the summer months fever is prevalent, which, however, is not considered dangerous, and may in 10 a great measure be avoided by taking precautions.

**Trade.**—The principal exports are cereals, hides, and tobacco.

**Repairs.**—There are no facilities for repairing either hull or machinery.

**Communication.**—Dédé Agatch is connected by rail with 15 Saloniki, Adrianople, and Constantinople, and consequently with the whole of the railway system of Europe.

There is telegraph communication with the rest of the world.

**Water** is only procured from wells in summer, and is not good. In winter the Podomar, a small river that discharges at the east end 20 of the town, affords an ample supply, but it is very muddy. No facilities for watering a ship exist.

**Supplies.**—Meat, bread, and vegetables can be obtained by contract, but are scarce.

In 1910 there were 400 tons of coal in stock.

25

*Chart 1087, Thaso island to Dardanelles.*

**COAST.**—Cape Makri (Lat. 40° 49' N., Long. 25° 45' E.) is a little salient, and about one mile eastward of it is a red cliff; the coast westward continues low, with beach and cliff to Fenar point light-house, a distance of about 28 miles. At about 10 miles westward of 30 the cape Mount Marona, near the sea, is 2,174 feet high, and the coast at its base is skirted by rocks; farther westward red cliffs again appear, followed by an irregular low broken sandy shore. At nearly midway between these latter cliffs and Fenar point lighthouse is a projecting rocky point, and about half a mile southward of it are Apostoli rocks, 35 one of which is above water; these rocks are about 6½ miles from Fenar point, and the shore between is bordered by shallow water, which extends a long way off, and south-south-eastward of Fenar point for a distance of 1½ miles.

View at page 493.

40

The Mounts Marona, Zanthé (3,815 feet), and Pilaf Tepe (6,143 feet) are very conspicuous. The two latter are west of Kara-Agatch.

*General charts 1087, 1086, 2836b.*



*Chart 1087, Thaso island to Dardanelles. Var. 2° 50' W.*

**Obstruction.**—A sunken obstruction, on which a vessel touched in 1915 when drawing 15 feet of water, exists at a distance of  $2\frac{8}{10}$  miles, 133° true, from Fenar point light.

5 *Plan of Kara-Agatch bay and Lake Burughiul on 1892.*

**KARA-AGATCH BAY or PORTO LAGOS.**—At 7 miles west-south-westward of Fenar point is Cape Balustra, a low rocky projection; between these two points a low broken sandy coast, cut up with the outlets of lagoons, falls back about 4 miles and forms 10 Kara-Agatch bay, known also as Porto Lagos, which is bordered all round by shallow water, extending off in places more than a mile. Vessels, however, may anchor with off-shore winds westward of the lighthouse, in about 7 fathoms water, and small vessels farther in at the head of the bay as convenient.

15 The bay communicates with Lake Burughiul on the north by a narrow boat channel through the broken shore which separates them.

Lake Burughiul (ancient *Bistonis*), within the head of the bay, extends about  $7\frac{1}{2}$  miles north and south, is from 6 to 14 feet deep, and bounded on either side by extensive plains; two or three small streams 20 run into it.

**LIGHT** (*Lat. 40° 57' N., Long. 25° 08' E.*).—A light, elevated 72 feet above the sea, is shown on Fenar point, the eastern side of entrance to Kara-Agatch bay.

**Shoals.**—A shoal of  $1\frac{3}{4}$  fathoms lies  $1\frac{3}{4}$  miles west-north-westward, 25 and another with  $2\frac{3}{4}$  fathoms on its north-east end, 2 miles north-westward from Fenar point light. An isolated patch, with  $3\frac{1}{4}$  fathoms on it, lies on the west side of the bay,  $1\frac{8}{10}$  miles eastward from the eastern part of Cape Balustra.

**Buoy.**—For the use of certain steamers calling here, a buoy is 30 placed about  $1\frac{1}{4}$  miles off the entrance to the lake, and north-north-westward  $2\frac{2}{10}$  miles from Fenar point light. This buoy is lighted occasionally at night.

**Caution.**—Vessels navigating in the vicinity of Kara-Agatch bay 35 should take every precaution, as the chart is compiled from a very old survey.

The point 3 miles eastward of Fenar point is reported to lie one mile further south than is now shown on the charts, and the 3-fathoms bank northward of Cape Balustra is said to have extended further to the eastward.

40 Changes are reported to have taken place in the depths in the northern part of the bay since the survey was made.

See Caution on page 484.

*General charts 1086, 1087, 2836b.*

*Plan of Kara-Agatch bay and Lake Burughiul on 1892. Var. 2° 50' W.*

**Communication.**—Kara-Agatch is connected with the general system by telegraph with Zanthé (Skecher), a station on the railway from Saloniki to Dédé Agatch, which passes about three-quarters of a mile from the head of Lake Burughiul.

5

*Charts 1086, 1087.*

**Coast.**—From Cape Balustra the coast trends 3 miles westward and 5 miles south-westward to the Kara Su river; in the latter portion the coast is broken through occasionally by changing outlets of that river, into which there is scarcely passage for a boat.

10

*Plan of Thaso strait on 1679.*

**Kara Su river** (*Lat. 40° 51' N., Long. 24° 49' E.*).—This river (ancient *Nestus*) rises on the southern slope of the Balkans, and after a south-south-easterly course for about 130 miles falls into the sea through the plain of the Nestus, from 7½ to 10½ miles west-south-westward from Cape Balustra; it has four mouths, but they are completely barred by sandbanks, so that even boats of light draught cannot gain an entrance to the river, and the land between the mouths is swampy.

15

Off the mouths of the river, in 1916, depths of 5 fathoms were found quite close to the shore, except off the easternmost mouth, where the 5-fathoms line trended more eastward to nearly two-thirds of a mile from the shore, when its direction changed to north-north-eastward.

20

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[For coast westward of this, and Thaso strait, see page 298 *et ante*.]

*General charts 1086, 1087, 2836b.*

## APPENDIX I.

## PARTICULARS OF DRY DOCKS, PATENT SLIPS, &amp;c.

Port.	Name of Dock.	Length.		Breadth of Entrance.	Depth at M.H.W.S.		Springs Rise.	Lifting Power.	Date Built.	Remarks.
		On Blocks.	Over all.		On Sill.	On Blocks.				
Piræus .....	No. 1 Dock .....	Feet { 474 492	Feet 494 512	Feet 79½ Caisson	Feet 29½ in outer stop.	Feet 28½ in outer stop.	Feet —	Tons —	—	N.E. end of Outer harbour.
	" 2 " .....	{ 331 349	{ 351 369	46½ Caisson	25½ in outer stop.	25½	—	—	—	" "
	Patent Slip. Basiliades	336 (Cradle)	—	—	Forward Aft	16 21	—	3,500	1907	West end of Outer harbour, north side.
Salamis .....	Government Floating	—	308½	61	—	21	—	3,000	1885	Moored off Dockyard.
Syra .....	Patent Slip .....	314 (Cradle)	—	—	Forward Aft	12 16	—	2,500	—	—
	" .....	180 (Cradle)	—	—	Forward Aft	10 14	—	600	—	—
Smyrna .....	Patent Slips .....	—	—	—	—	—	—	—	—	There are three small patent slips at Smyrna for local vessels of 70 to 100 tons.

## APPENDIX II.

LIST OF PRINCIPAL PORTS, SHOWING PARTICULARS  
OF DEPTHS, &c.

Port.	Depth at M.L.W.S. in Channel of Approach.	Depth at M.L.W.S. in Anchorage.	Rise of Tide.		Remarks.	
			Spgs.	Nps.		
Mudros, Port .....	E. Pass, 10 to 17 fms. .... Mid. Pass, 6½ fathoms.... W. Pass, 4 fms. ....	4 to 10 fms.	—	—		
Nauplia .....	Deep .....		7 to 9 fms. ..	—	—	
Piræus .....	15 fms. ....		4 to 8 fms. ..	—	—	
Rhodes, Tershaneh ..	8 feet .....		10 to 18 feet ..	—	—	
„ Southern harbour ..	34 to 48 feet..	15 to 27 feet ..	—	—		
„ Summer anchorage	Deep .....	72 to 108 feet..	—	—		
Salamis .....	3½ to 4 fms., Georgio channel.	12 to 18 fms.*	—	—	* Salamis strait.	
Saloniki .....	Deep .....	7 to 9 fms. ..	—	—	16 to 30 feet alongside quays in har- bour.	
Sigri, Port .....	11 to 20 fms..	7 to 14 fms. ..	—	—	3¾ to 4¾ fms.	
Smyrna .....	6 to 11 fms. ..	7 to 10 fms. ..	—	—	alongside quays in Port Abri.	
Suda bay .....	12 to 20 fms..	13 to 16 fms..	—	—		
Syra.....	13 to 23 fms..	6 to 10 fms. ..	—	—		

## APPENDIX III.

PLACE—MEGALO KASTRON OR CANDIA, CRETE. OBS.  $\Delta$  LAT.  $35^{\circ} 20' N$ , LONG.  $25^{\circ} 09' E$ . Height above M.S.L., 89 feet.  
METEOROLOGICAL TABLE COMPILED FROM 3 TO 56 YEARS' OBSERVATIONS. (1856-1911.)

MONTH.	BAROMETER. At 32° F., Mean Sea Level, and Lat. 45°.				AIR TEMPERATURE.								Relative Humidity. Scale 0 to 10.			RAIN.			WIND.										No. of Days Gale.	No. of Days Fog.	
	Mean.		Extreme.		Mean.				Extreme.				Cloud Amount. Scale 0 to 10.	RAIN.		Mean Force, Beaufort Scale.	Number of Days from														
	For Month.	Daily Range.	Mb.	Mb.	Max.	Min.	Range.	° F.	° F.	° F.	° F.	Max.		Min.	Range.		° F.	° F.	° F.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.			
																															For Month.
January	-	1018.1	-	-	-	-	-	51	57	47	10	69	36	33	69	6	3.39	15	Ins.	1.02	-	7	0	0	13	3	0	5	3	0	0
February	-	1017.3	-	-	-	-	-	52	59	47	12	74	33	41	69	6	3.23	12	1.79	-	3	1	0	0	12	2	0	4	6	0	0
March	-	1014.7	-	-	-	-	-	55	62	50	12	78	40	38	68	5	1.97	12	1.18	-	3	0	0	1	9	3	1	5	9	0	0
April	-	1014.0	-	-	-	-	-	61	67	54	13	84	45	39	64	4	0.63	5	0.59	-	2	0	0	1	6	2	1	6	12	0	0
May	-	1014.4	-	-	-	-	-	68	73	60	13	93	52	41	63	3	0.48	4	0.35	-	3	1	1	0	4	1	0	9	12	0	0
June	-	1013.5	-	-	-	-	-	75	80	67	13	102	61	41	61	1	0.09	1	0.33	-	3	1	0	1	1	0	0	12	12	0	0
July	-	1011.4	-	-	-	-	-	78	83	72	11	95	65	30	61	0	0.12	1	-	-	1	0	0	0	1	0	2	20	7	0	0
August	-	1012.2	-	-	-	-	-	79	84	73	11	90	66	24	60	1	0.35	1	1.29	-	1	1	0	0	0	1	2	20	6	0	0
September	-	1015.9	-	-	-	-	-	75	80	72	8	100	60	40	66	1	0.78	2	2.94	-	3	0	0	0	3	1	0	13	10	0	0
October	-	1017.1	-	-	-	-	-	67	72	62	10	90	51	39	68	3	1.81	7	2.33	-	3	1	0	0	4	3	1	12	7	0	0
November	-	1015.9	-	-	-	-	-	61	68	57	11	87	44	43	68	5	3.58	12	2.28	-	1	1	0	1	11	5	1	5	5	0	0
December	-	1016.0	-	-	-	-	-	55	62	51	11	76	43	33	73	5	3.98	15	1.34	-	3	0	0	1	13	6	1	3	4	0	0
Means	-	1015.0	-	-	-	-	-	65	71	59	12	-	-	-	66	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20.41	87	2.94	-	33	6	1	5	77	27	9	114	93	0	0
Extreme Values	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Yrs. Obs.	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	4	3	4	3	-	-	-	-	-	-	-	-	-	-	3

Observations at 8 a.m., 2 p.m., and 9 p.m.

Authority:—Annales de l'Observatoire Nationale d'Athènes.

Meteorological Office,

September 20th, 1917.

PLACE—ATHENS. OBS. Δ LAT. 37° 58' N., LONG. 23° 44' E. Height above M.S.L., 351 feet.  
METEOROLOGICAL TABLE COMPILED FROM 2 TO 73 YEARS' OBSERVATIONS. (1839-1911.)

APPENDIX III.

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MONTH.	BAROMETER. At 32°F., Mean Sea Level, and Lat. 45°.				AIR TEMPERATURE.								Relative Humidity. Scale 0 to 10.		RAIN.			WIND.										No. of Days Gale.	No. of Days Fog.																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	Mean.		Extreme.		Mean.				Extreme.				Cloud Amount. Scale 0 to 10.	Total Fall.	No. of Days. 24 hours.	Mean Force. Beaufort Scale.	Number of Days from						N.	N.E.	E.	S.E.	S.			S.W.	W.	N.W.	Calm.																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	For Month.	Daily Range.	Mb.	Min.	Max.	For Month.	Min.	Max.	Range.	°F.	°F.	°F.					°F.	°F.	°F.	°F.	°F.	°F.												°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	

Hourly Observations.

Authority:—Annales de l'Observatoire Nationale d'Athènes.

Meteorological Office,  
September 20th, 1917.

PLACE—SYRA. OBS. Δ LAT. 37° 27' N., LONG. 24° 56' E. Height above M.S.L., 80 feet.  
METEOROLOGICAL TABLE COMPILED FROM 4 TO 54 YEARS' OBSERVATIONS. (1858-1911.)

MONTH.	BAROMETER. At 32° F., Mean Sea Level, and Lat. 45°.				AIR TEMPERATURE.								Relative Humidity.				RAIN.				WIND.												No. of Days Gale.	No. of Days Fog.																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	Mean.		Extreme.		Mean.				Extreme.				Cloud Amount, Scale 0 to 10.	Total Fall.	No. of Days.	Max. Fall in 24 hours.	Mean Force, Beaufort Scale.	Number of Days from																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	For Month.	Daily Range.	Mb.	Mb.	Max.	Min.	Range.	Max.	Min.	Range.	°F.	°F.						°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.			°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°F.	°

Observations at 8 a.m., 2 p.m., and 9 p.m.

Authority:—Annales de l'Observatoire Nationale d'Athènes.

Meteorological Office,  
September 20th, 1917.

MONTH.	BAROMETER. At 32° F., Mean Sea Level, and Lat. 45°.				AIR TEMPERATURE.						Relative Humidity. (Cloud Amount Scale 0 to 10.)				RAIN.				WIND.								No. of Days Strong Winds.						
	Mean.		Extreme.		Mean.			Extreme.			Range.		Range.		Total Fall.	No. of Days.	Max. Fall in 24 hours.	Mean Force, Beaufort Scale.	Number of Days from														
	For Month.	Daily Range.	Max.	Min.	For Month.	Max.	Min.	Range.	Max.	Min.	Range.	N.	N.E.	E.					S.E.	S.	S.W.	W.	N.W.	Calm.									
January	-	-	1019.7	-	1041	992	49	42	48	35	13	67	19	48	71	5	1.47	Ins.	7	1.53	-	8	4	2	1	1	1	1	1	1	1	12 3-8	
February	-	-	1017.8	-	1037	995	42	45	52	39	13	70	15	55	69	5	1.43	9	1.44	-	5	3	3	1	1	1	1	1	1	1	1	12 3-1	
March	-	-	1014.7	-	1029	996	33	50	57	44	13	79	27	52	67	6	1.63	9	1.68	-	5	3	2	2	1	4	1	1	1	1	1	12 2-8	
April	-	-	1014.7	-	1030	996	34	57	66	50	16	86	33	53	65	5	1.89	10	2.01	-	4	2	1	2	2	5	1	1	1	1	1	12 2-7	
May	-	-	1012.9	-	1027	995	32	67	77	59	18	96	44	52	64	4	2.35	10	2.02	-	3	1	2	2	2	6	2	1	1	1	1	12 1-2	
June	-	-	1014.1	-	1022	1003	19	74	85	66	19	101	53	48	59	3	1.74	9	2.27	-	4	2	1	2	2	5	2	1	1	1	1	11 0-6	
July	-	-	1012.5	-	1020	1002	18	80	90	70	20	103	55	48	54	2	1.00	5	2.13	-	5	2	1	1	2	6	2	1	1	1	1	1	11 2-8
August	-	-	1014.1	-	1024	1005	19	78	89	70	19	105	59	46	56	2	1.22	5	1.96	-	4	1	1	1	2	6	1	1	1	1	1	1	14 1-7
September	-	-	1016.2	-	1033	999	34	72	81	64	17	99	46	53	62	3	1.58	6	1.92	-	3	2	2	1	1	5	1	1	1	1	1	1	14 2-7
October	-	-	1018.3	-	1032	999	33	64	71	57	14	88	33	55	71	5	2.09	8	3.03	-	3	2	3	1	2	4	1	1	1	1	1	1	14 1-4
November	-	-	1021.8	-	1041	999	42	52	59	46	13	79	25	54	72	6	2.70	9	3.38	-	6	3	3	1	1	1	1	1	1	1	1	1	13 2-6
December	-	-	1019.5	-	1040	993	47	46	53	41	12	71	23	48	74	6	2.39	10	2.31	-	6	3	3	1	1	1	1	1	1	1	1	1	14 2-4
Means	-	-	1016.6	-	-	-	-	61	69	53	16	-	-	-	65	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21.49	97	-	-	56	23	24	16	18	45	15	12	151	32.5	-	-	
Extreme Values	-	-	-	-	1041	992	49	-	-	-	-	105	15	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Yrs. Obs.	6½	-	5				19	13	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19

Hours of observation, 7 a.m., 2 p.m., and 9 p.m.

Authorities :—Eredia, F. Sul clima di Salonico, Roma 1916.

Bulletin annuaire Salonique.

Meteorological Office,  
September 20th, 1917.



PLACE—SMYRNA. OBS. Δ LAT 38° 26' N., LONG. 27° 10' E. Height above M.S.L., 65 feet.  
METEOROLOGICAL TABLE COMPILED FROM 6 TO 40 YEARS' OBSERVATIONS. (1874-1913.)

MONTH.	BAROMETER. At 32° F., Mean Sea Level, and Lat. 45°.				AIR TEMPERATURE.								Relative Humidity.		RAIN.			WIND.							No. of Days Gale.	No. of Days Fog.																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	Mean.		Extreme.		Mean.				Extreme.				Range.	For Month.	Daily Range.	Mb.	Mb.	Mb.	° F.	° F.	° F.	° F.	° F.	° F.			° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	° F.	°

Observations at 8 a.m.

Authorities:—U.S. Chief Signal Officer's Report, 1891.  
Daily Bulletin of International College.  
M.S. Reports of M.O.

Meteorological Office,  
September 30th, 1917.

MONTH.	BAROMETER. At 32° F., Mean Sea Level, and Lat. 45°.				AIR TEMPERATURE.						Relative Humidity.		RAIN.			WIND.							No. of Days Gale.	No. of Days Fog.			
	Mean.		Extreme.		Mean.			Extreme.			Cloud Amount. Scale 0 to 10.	Total Fall.	No. of Days in 24 hours.	Number of days from													
	For Month.	Daily Range.	Max.	Min.	Range.	Max.	Min.	Range.	N.	N.E.				S.	S.W.	W.	N.W.	Calm.									
	mb.	mb.	mb.	mb.	°F.	°F.	°F.	°F.	°F.	%	Ins.	Ins.	Ins.	7	1-77	3-7	12	2	0	2	2	4	6	3	0	0	0
January	-	-	-	-	51	55	47	8	66	30	36	71	6	4.14	7	1-77	3-7	12	2	0	2	2	4	6	3	0	0
February	-	-	-	-	52	57	47	10	68	28	40	72	5	3.80	9	1-77	3-3	8	2	1	2	1	5	7	2	0	0
March	-	-	-	-	54	59	49	10	73	36	37	71	5	1.93	7	1-58	3-3	10	2	1	2	1	3	9	3	0	0
April	-	-	-	-	59	64	53	11	81	39	42	68	4	0.94	3	1-18	3-2	10	1	0	1	2	3	11	2	0	0
May	-	-	-	-	65	72	59	13	91	50	41	61	4	0.63	3	0-63	2-7	11	1	1	0	1	2	14	1	0	0
June	-	-	-	-	71	78	65	13	98	54	44	61	2	0.19	1	0-98	2-4	9	1	0	0	0	1	17	1	1	0
July	-	-	-	-	77	86	69	17	102	58	44	51	1	0.06	0	0-59	2-3	15	1	0	0	0	1	14	0	0	0
August	-	-	-	-	78	86	70	16	100	59	41	50	1	0.19	0	1-38	2-3	17	2	0	0	0	1	11	0	0	0
September	-	-	-	-	74	82	67	15	99	55	44	55	2	0.52	1	1-18	2-5	16	1	0	0	0	1	11	1	0	0
October	-	-	-	-	68	73	62	11	86	50	36	64	4	2.21	5	2-17	2-6	16	2	1	1	1	2	7	1	0	0
November	-	-	-	-	59	65	54	11	79	39	40	71	5	4.12	8	4-72	3-0	13	3	1	2	2	4	4	1	0	0
December	-	-	-	-	54	59	50	9	70	32	38	72	6	5.62	9	2-36	3-0	12	2	1	2	2	4	6	2	0	0
Means	-	-	-	-	64	70	58	12	-	-	-	64	4	-	-	-	2-9	-	-	-	-	-	-	-	-	-	-
Totals	-	-	-	-	-	-	-	-	-	-	-	-	-	24.35	53	-	-	149	20	6	12	31	117	17	1	0	7
Extreme Values	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
No. of Yrs. Obsd.	60	-	-	-	15				16	18	8	16	8	16							8	6					

Hours of observations, 8 a.m. and 2 p.m.

Authorities:—Annales de l'Observatoire Nationale d'Athènes.

Schellenberg, O., Studien zur Klimatologie Griechenlands.

Meteorological Office.  
 May 16th, 1918.

## APPENDIX IV.

**List of spots suitable for magnetic observations.**

**Suda bay.**—The suitable spot for magnetic observations is situated 303° 30', true, 17 cables from the Naval cemetery. Suda fort lighthouse bears 96° 21' true. Position, lat. 35° 29 $\frac{3}{4}$ ' N., long. 24° 03 $\frac{1}{4}$ ' E.

5. **Volo.**—This situation is on the pier, 338° true, 1 $\frac{7}{10}$  cables from Cape Sesklo lighthouse. The house on the cape bears 63° 47' true, and the minaret 18° 51' true. Position, lat. 39° 20' 45" N., long. 22° 56' 40" E.

10. **Thaso.—Limena.**—The observation spot is situated 6 feet from a small white marble pillar, 2 feet high, 202° 30' true, 250 yards from the ruined tower at the east end of the bay. The wooden beacon on Mount Elias bears 191° 38' 06" true. Position, lat. 40° 46' 24" N., long. 24° 44' 00" E.

15. **Kos.**—The suitable spot for magnetic observations is situated on a sand spit, 65° true, 150 yards from Kum point lighthouse. Position, lat. 36° 55' N., long. 27° 18 $\frac{1}{2}$ ' E.

20. **Samos.—Port Tigani.**—The most suitable spot for magnetic observations is situated on the breakwater, at an angle about 20 yards from the outer end, at the shoulder. Castle point 289° 07' 45" true, breakwater staff 98° 33' 49" true, left tangent Aspros Kavo 228° 05' 49" true. Position, lat. 37° 41' 38" N., long. 26° 58' 10" E.

**Smyrna.**—The suitable spot for magnetic observations is situated on the breakwater, 130 yards from the red light on the north end. The minaret at the upper end of the Turkish cemetery bears 186° 35' true. Position, lat. 38° 25' 42" N., long. 27° 08' 55" E.

25. **Mityleni.—Sigri island.**—On the S.E. corner of Sigri island, 20 yards west of a small cove, and about 80 yards north of the southern point. The position is marked by a small stone cairn, and is situated in lat. 39° 11' 53" N., long. 25° 50' 23" E. Minaret in town to eastward of fort 59° 54' true, lighthouse vane 334° 15' 30 true.

**Lemnos.—Port Mudros.**—The situation is 146° true, 3 $\frac{1}{2}$  cables from the end of the pier, and 35° true, 12 yards from the N.W. corner of a clump of bushes near a small stone hut. The hut

is in line with another hut on the hill. The nearest windmill above the town is in transit the right extreme of a large yellow house and also a small white house with a red roof. The tall pier flagstaff bears  $338^{\circ} 06' 15''$  true. Position, lat.  $39^{\circ} 51' 30''$  N., long.  $25^{\circ} 16' 12''$  E.

**Tenedos.**—On ridge southward of Tenedos town, and 300 yards 5  
westward of north-western of eight windmills. Hut on summit southward of Mount Sana bears  $262^{\circ} 15'$  true, cupola near Ku castle  $3^{\circ} 29'$  true, left tangent Tenedos rock  $125^{\circ} 10'$  true. Position, lat.  $39^{\circ} 49' 54''$  N., long.  $26^{\circ} 04' 52''$  E.

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**Abnormal variation** of the compass has been experienced off 10  
Akrotiri peninsula, Crete.

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## APPENDIX V.

## ADDITIONAL INFORMATION.

*Chart 2048, Skyros island. Var. 3° 10' W.*

**PORT TREBUKI** (*Lat. 38° 47' N., Long. 24° 36' E.*), *see page 242.*—**Anchorage.**—The best anchorage is off the shingle beach at the mouth of the valley between Mount Pephko and Rupert Brooke  
 5 hill on the eastern side of the harbour; in this vicinity the 20-fathoms line is 3 cables, and the 5-fathoms line one cable, from the shore. During a northerly gale the best anchorage is in 16 fathoms, with the black and white vertically striped stone cairn bearing 115° true, distant 3 cables, as in this spot the squalls do not appear to be quite so  
 10 violent as those experienced a cable on either side, to the north-west or south-east.

**Water.**—The only water to be obtained in Port Trebuki is from a well on the southern side of Sarakino island; this is reached from Glyphada bay, being about 600 yards up the valley which runs in a  
 15 westerly direction from the head of that bay. This water is not of very good quality, being apparently rain water.

Port Trebuki is entirely destitute of houses and consequently no provisions are to be obtained.

*Plan of Port Kupho on 1679.*

20 **PORT KUPHO** (*Lat. 39° 58' N., Long. 23° 56' E.*), *see page 279.*—Port Kupho is much used by local small craft as a shelter from all winds. The holding ground is moderately good on the whole.

The passage between Praso islet (Peristonnis) and the mainland is foul.

25 During the winter months, after cold and severe northerly weather, the lakes and marshes abound with duck and snipe.

*General charts 426, 1086, 2836b.*

*Chart 1665, Mityleni island, &c. Var. 2° 40' W.*

**PORT KALLONI** (Lat. 39° 08' N., Long. 26° 13' E.) (see page 436) affords well-sheltered accommodation, with good holding ground, to all types of vessels. It is surrounded by hills, which in many places are covered with olive groves and backed by mountainous country, the low land round the shore being cultivated. 5

*Plan of entrance to Port Kalloni on chart 1665.*

Off the north-eastern extreme of Kalloni island are rocks which extend for 80 yards, and shoal water of less than 3 fathoms for 1½ cables in a north-easterly direction. 10

Plati point, which forms the north-western side of the entrance, may be recognised by a conspicuous beacon-like rock, 60 feet high, close westward of the extremity of the point; whilst 4 cables north-north-eastward is Kennedy bluff, a conspicuous, well-defined, cliffy bluff, 193 feet high. Lowestoft hill, a conspicuous, rounded hill, 470 feet high, on the eastern side of the entrance, is a good mark when making Port Kalloni from the southward. 15

Shoal water of less than 3 fathoms extends 1¾ cables south-south-eastward from Peramo Kavo (Pandelemon point). A bank, with a least depth of 6 feet, extends 1¼ cables eastward from the extreme of Apotheka point. Caution should be exercised when entering Apothero (Apotheka) bay, as, apart from the bank off Apotheka point, shoal water also extends 1¼ cables in a westerly direction from the western extreme of Erimo-nisi; this islet is entirely surrounded by shoal water, that on its south-eastern side extending 1½ cables in a south-easterly direction. There is a shoal of less than 3 fathoms in the centre of the channel between Erimo-nisi and Lena point. 25

The anchorage in Apothero (Apotheka) bay should be used with caution, as the holding ground is not good. Large vessels may anchor in Agia Pandelemona (Pandelemon) bay, south-westward from Erimo-nisi. 30

Good water may be obtained from the fountain close north of Armouthi point on the south-east side of Agia Pandelemona bay.

*Chart 1665, Mityleni island, &c.*

Port Kalloni itself is practically free from dangers, with the exception of a bank which extends 2¼ cables in an easterly direction from Daphnudi point; this bank carries from 3½ to 4 fathoms of water over 35

*General charts 1665, 2836b.*

*Chart 1665, Mityleni island, &c. Var. 2° 40' W.*

it, except at its outer end, where there is a rock with a least depth of 6 feet; close outside this rock the water deepens quickly to 9 fathoms.

A small shoal, having a least depth of 16 feet, lies 5 cables west-south-westward from Alaga point, whilst off Sekamudi point, close southward of this shoal, shallow water extends 3 cables in a westerly direction.

In Beara bay, one cable off-shore and  $1\frac{1}{2}$  cables north of Ahlatheri point, is a patch of rocks awash at low water.

Arkuthi rock, a small rocky islet, 10 feet high, lies  $2\frac{1}{4}$  cables westward of Kakovuno point, which point forms the south-west extreme of Limni bay. There is a channel between this rock and the shore with depths of from 3 to 4 fathoms in it.

**Towns and villages.**—There are numerous small towns and villages round Port Kalloni, the most important of which are Kabkha, on the south-eastern shore, about  $2\frac{1}{4}$  miles from the inner entrance into Port Kalloni, with its salt works and olive oil refineries, the latter each having a tall chimney, the northern of which is white and very conspicuous.

Parakeli (Parakela) (*Lat. 39° 10' N., Long. 26° 09' E.*), on the north-western shore, is about 4 miles within the inner entrance, and stands back about three-quarters of a mile from the shore. Both of these towns are in direct telephonic communication with Mityleni.

There is a good motor road to Mityleni, passing along the head of the bay.

Ahlatheri farm is a very conspicuous large white house surrounded by several out-buildings, situated on the southern shore of Beara bay, which is one of the small bays on the north-east side at the head of Port Kalloni.

**Beara hill**, situated about half a mile eastward of Ahlatheri farm, is a well-defined plateau, on the summit of which stands a small white house visible from nearly all points. This hill is the site of the ancient city of *Pyrrha*, founded by the Æolians in about the 11th century B.C., and sacked and reduced to ruins by the Lybians in the 2nd or 1st century B.C. In the solid rock, especially at the western extreme of the plateau, may easily be distinguished places hewn out to receive the foundations of buildings which formerly existed there.

*General chart 2836b.*

*Chart 1665, Mityleni island, &c. Var. 2° 40' W.*

**Anchorage.**—Good anchorage for large vessels may be found anywhere in Port Kalloni, but Xenorodo bay at the north-eastern end is chiefly used by men-of-war; here anchorage may be found in 4½ fathoms, over mud, good holding ground. There is also a boat pier 5 convenient for landing.

Small vessels are recommended to use Limni bay, as there is good shelter against all winds from N.E. through east to S.W., and the holding ground is good. The only danger to be avoided in this bay is an isolated rock with about 5 feet of water over it, 1½ cables north-westward from Kaloyeraki point, and rather less than one cable from the shore. 10

*Chart 1087, Thaso island to Dardanelles.*

**IMBROS ISLAND.**—**South coast.**—**Pyrgos anchorage** (*Lat. 40° 05' N., Long. 25° 46' E.*) is situated on the south coast 15 of Imbros island, 4<sup>6</sup>/<sub>10</sub> miles east-south-eastward of Avlaka point (*see page 485*), and forms a convenient anchorage in fine weather; the bottom, of sand, is good holding ground. During strong north-easterly gales a heavy sea runs into the anchorage, and a strong current sets to the westward. Foul ground extends 170 yards from Pyrgos point, 20 except for which the anchorage is clear of dangers.

A clifly headland, 100 yards broad and 56 feet high, projects from a sandy beach on each side. Upon this promontory is situated the ruin of the tower from which the village derives its name.

A chapel, painted white, on the summit of the point, forms a most 25 conspicuous mark from seaward. Other conspicuous objects are, a house north-westward of the village, and the chapel situated on the 145-foot summit eastward of the anchorage.

A pier, with a depth of 4 feet at its outer end, is situated to the east of the point. Caiques and trading craft usually unload on the sandy 30 beach to the west of the point.

The village is situated on the neck joining the headland to the coast. A telephone in the café connects with Okinudi (Skinudi) and Panagia.

Small supplies of fish, eggs, fruit, and vegetables are procurable. The water for the village is drawn from a spring to the west of the 35 village; it is not recommended for drinking.

**Kusu bay** (*see page 485*) affords anchorage in fine weather and with southerly winds; the bottom is sand, good holding ground. Vessels should be prepared to leave in the event of the wind freshening from the northward, as a heavy sea is quickly raised with the wind 40 from that direction.

*General chart 2836b.*



*Chart 1087, Thaso island to Dardanelles. Var. 2° 30' W.*

Welcome point, which forms the north-eastern point of Imbros island, is a bold, clifly headland, rising to a height of 351 feet; it is steep-to, the 10-fathoms line being 70 yards from the shore. Grafton  
5 point (*Lat. 40° 13' N., Long. 25° 58' E.*) is a bold headland; a rock, 36 feet high, projects from this point. The plain in the middle of the bay, as well as all the available areas on the slopes of the hills, are cultivated.

The two chapels situated on the shore of the bay, being painted  
10 white, are conspicuous in the sun.

A rock, one foot above water, lies 300 yards east-north-eastward from the northern chapel. Shoal water, which is clearly visible in fine weather on account of the discoloration of the water, extends 70 yards to seaward of the rock. Turk reef is a low point of flat rock; the hills  
15 in rear of the point consist of a kind of grey shale.

A pier, with a depth of 4 feet at its outer end, is situated near the chapel on the northern side of the bay.

Two wrecks lie in the north-western part of Kusu bay, the outer one, with a depth of 5 feet over it, lies about  $2\frac{1}{4}$  cables south-eastward of  
20 the pier.

There is no village in the locality, and supplies are not obtainable.

*General chart 2836b.*

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SAINT JOHN'S (NEW- FOUNDLAND).	-	-	Ayre & Son	-	-	-	231, Water Street.
SEATTLE (WASH.)	-	-	Max Kuner Co.	-	-	-	804, First Avenue.
SHANGHAI	-	-	Walter Dunn	-	-	-	133, Szechuen Road.
"	-	-	Hirsbrunner & Co.	-	-	-	1, Nankin Road.
SINGAPORE	-	-	Hon. Sec. and Treasurer	-	-	-	Sailors' Home.
SYDNEY (N.S.W.)	-	-	Turner & Henderson	-	-	-	16 & 18, Hunter Street.
TOKYO (JAPAN)	-	-	Takata & Co.	-	-	-	Merchants.
TORONTO (CANADA)	-	-	Charles Potter	-	-	-	85, Yonge Street.
VALPARAISO	-	-	Holbrook & Tyrer	-	-	-	153, Calle Blanco.
VANCOUVER CITY (B.C.)	-	-	Clarke & Stuart Co.	-	-	-	320, Seymour Street.
VICTORIA (B.C.)	-	-	Hibben & Co.	-	-	-	66, Government Street.



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